AUGUST 1961

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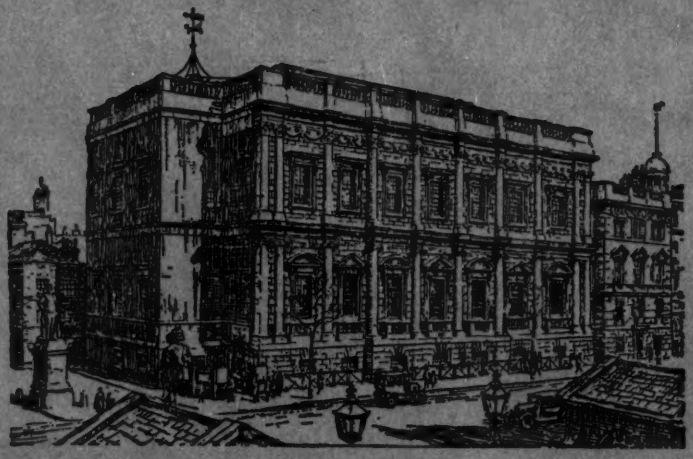

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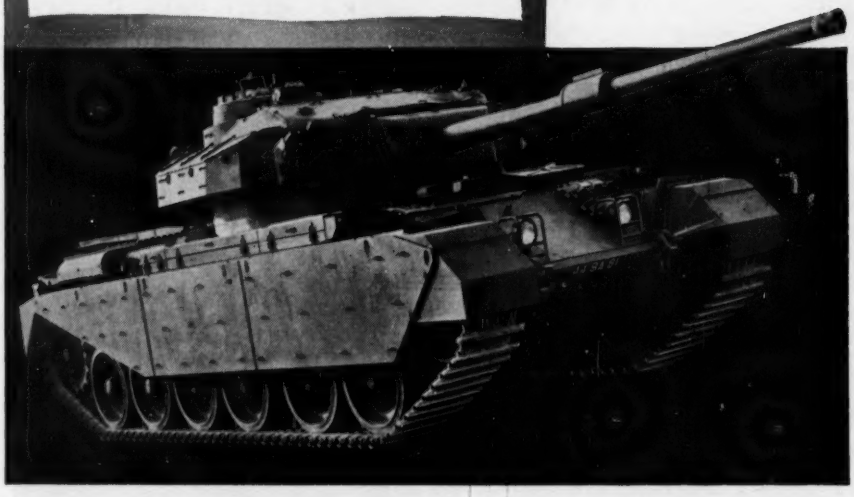

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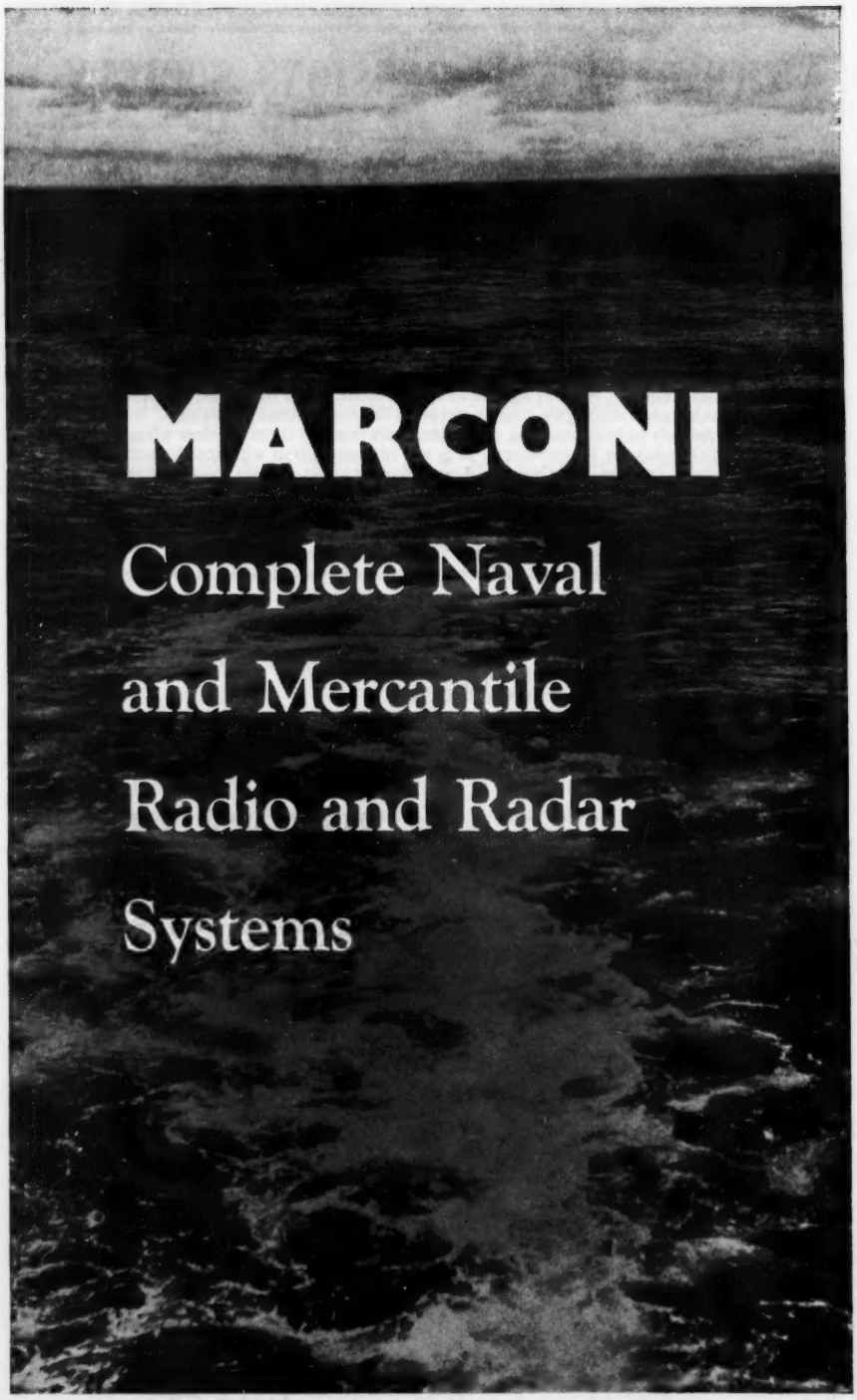

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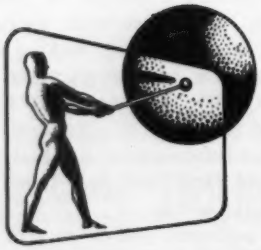

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H.R.H. The Duke of Gloucester reviewing the Scots Guards on 29th May, 1961, to mark the 25th year of his Colonelcy of the Regiment

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Vol. CVI **AUGUST, 1961** **No. 623**

H.R.H. The Duke of Gloucester reviewing the Scots Guards on 29th May, 1961, to mark the 25th year of his Colonelcy of the Regiment

EDITOR'S NOTES

THE post-war pattern of tangled relations continues to tease our Service lives. No sooner does some sort of precarious *modus vivendi* appear to be emerging from the stresses of a peace which is no peace, than a couple of pebbles are thrown into the international pool, to spread their ripples across a momentarily placid surface and plunge us once again into doubt and distrust.

The two most recent of these pebbles are the Kuwait affair and Berlin. Kuwait at least gave Britain a chance to demonstrate to the world that her forces have absorbed some useful lessons in swiftness of reaction since only a very few years ago, when the machine creaked badly. Sea, land, and air can all be justifiably gratified at the smoothness and speed with which the British forces swept into Kuwait.

Yet something more than smoothness and speed is required if an operation of this sort is to be of real value in a fighting war. A force, even of brigade proportions, requires armour and some heavy support weapons if its teeth are to be sharp enough to deter an enemy armed with modern weapons.

Some other features of this operation also give rise to some disquiet. How vulnerable, for instance, was the Commando carrier *Bulwark* to underwater attack while she lay off Kuwait? What sort of target would a Canberra bomber present to a Mig fighter? These and similar questions need an answer before we can congratulate ourselves on having found the answer to the problem of meeting aggression quickly enough and in sufficient force to deter. In the conditions of Kuwait, no doubt the show of force was sufficient. But would the answer have been the same against a more determined aggressor?

These questions are not posed in any sense of criticism or hostility, but merely to draw attention to the fact that we have not reached the ultimate yet. If we can look upon Kuwait as evidence that our military thinking is starting off down the right road but has still a long way to travel, then all is well. But if we look upon it as proof that we have deterred aggression in Kuwait (as we probably have) and that therefore no more is needed in any future emergency, we may yet have some sharp and painful lessons to learn. If our experiences here cause someone to take a sharp and detailed look at our present amphibious warfare squadron, much good will perhaps emerge. We might also study with advantage the problem of ground attack aircraft in operations of this nature. With the problem of dwindling manpower in the Services to be faced, we cannot afford anything but the best. It will be costly, of course, and maybe a little of the swiftness will have to be

sacrificed, but if we are to make progress along this particular military road—and there are many who maintain that it is the right road—the pitfall to be avoided at all costs is to be satisfied at the result of the Kuwait operation. The risks and the deficiencies there are not difficult to see, and should not be hidden under any cloak of complacency.

Kuwait is an operation where an impressive start was made. Superb timing and efficiency demonstrated the ability of the Services to move swiftly and in useful force to a potential trouble spot. But in actual war it is the finish that matters, not the start.

The second pebble in the pool has all the familiar aspects of the old curse of brinkmanship, which one had hoped had died a natural death a couple of years ago. Already one can almost hear the rockets rattling as each side prepares its last ditch stand. It is all the more ridiculous since the only concrete fact about the whole of the Berlin trouble is that neither West nor East reckons Berlin worth fighting a major war about.

Yet here again one comes up against the ageless question: when and where do we make the stand? As in the Middle East complex, so also in the European. Perhaps Berlin would be as good a place as any other were the divided city not such an anachronism in this day and age.

Consideration of the Berlin problem leads inevitably to a hard and penetrating look at N.A.T.O. Where, one wonders, are those 55 divisions agreed at Lisbon a few years ago as the minimum force required to provide a valid deterrent against European adventures by the Eastern bloc? For how much longer is the French military contribution to Western European defence to be tied by the heels in Algeria? What about those four British divisions pledged by Sir Anthony Eden to remain in Europe for 99 years?

In our look at N.A.T.O., it is difficult not to be reminded of the musical comedy song of a decade or so ago:

> " I've been faithful to you, darling, in my fashion,
> I've been faithful to you, darling, in my way."

N.A.T.O., one would have thought, should deserve faithfulness of a somewhat higher order if it is really to be our shield and buckler in the West. In the posture which both sides are adopting as this new crisis on Berlin advances on its gloomy march towards showdown, the slim figure of the N.A.T.O. of today has some difficulty in convincing us that it is a worthy champion of the West.

Where does the fault lie? It is tempting, as it always is, to sit back and blame the Government, from time immemorial a convenient whipping-block when things go wrong. But are we ourselves so blameless? In all three Services, in some degree or other, there is evident a certain malaise, a feeling that we lack direction and do not know where we are going. It is, of course, difficult to put a finger on the actual spot and pin it down as the prime cause of our present uneasiness, but if we are honest with ourselves, we have to admit that we lack, at least in the European context, a moral principle sufficiently sharply defined to inspire us to make that effort which is expected from us. By and large, this would appear to be true of all the Western allies, and one would hazard a guess that part of our Western troubles spring from the fact that we have all of us never had it so good before.

In the complex pattern of Europe today, this is bound to be a source of temptation to embark on risky adventures. So much of what we hold dear is at stake that

it is no longer good enough to look to a mighty champion across the Atlantic to pull all our European chestnuts out of the fire. We, too, have got to get to the heart of the matter, to regain our faith, to learn again that the only things worth having are those we are prepared to earn with our sweat and keep with our steadfastness and resolution.

This is a job at which we in the Services used to excel. It was easier in those days, for life was lived then at a less bewildering speed and against a less complicated technological background. But if we are to prosper we shall have to find the road back to those ideals and principles which made us, and kept us, a great nation. Europe today is the challenge of our times, with its focus now in Berlin. Are we, in our turn, keeping faith with Europe?

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It is regretted that an increase in printing costs will necessitate a higher charge for the JOURNAL being made to non-members, to take effect from the issue of February, 1962. The increase in price will be from 10s. 6d. a copy (£2 2s. for four issues a year) to 15s. 9d. (£3 3s. a year) including postage by surface mail. Members of the Institution will continue, of course, to receive their copies as part of their annual subscriptions.

The occasion of this increase is being taken to introduce a new format and cover for the JOURNAL, and to print it on paper which will make possible the reproduction of photographs.

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Because of a printing oversight, the map of Crete used in the article " Assault from the Sky: Crete, 1941 " in the May issue of the JOURNAL was not acknowledged as having been reproduced from the Australian Official History. Our apologies are due to Mr. Gavin Long, author of the Official History.

CHRISTMAS CARDS

Orders for Christmas Cards, specially designed for members of the Institution, can now be placed.

Card A has the crest of the Institution on the outside, and inside a reproduction of a black and white sketch of Vanbrugh House in Whitehall Yard, the first home of the Institution. The price, including envelopes, is 12s. a dozen.

Card B is a reproduction in colour of an oil painting showing a Review of the Fleet at Spithead in 1853, with the ships firing a Salute; inside is the crest of the Institution. The price, including envelopes, is 20s. a dozen. Postage and packing is 1s. for the first dozen and 6d. for each additional dozen by ordinary mail.

Members are requested to ensure that the correct remittance, including postage, is sent with their orders. Orders cannot be executed until payment is made.

Sample cards can only be sent against a remittance of 1s. 2d. for the A Type and 1s. 10d. for the B.

THE ECONOMICS OF TECHNICAL DEFENCES

By GRAHAM HUTTON, O.B.E.

On Wednesday, 22nd February, 1961, at 3 p.m.

MARSHAL OF THE ROYAL AIR FORCE SIR JOHN SLESSOR, G.C.B., D.S.O., M.C., in the Chair

THE CHAIRMAN: I read in my *Financial Times* yesterday that economists are "all too often as dedicated and set apart from the ordinary man as Trappist monks." You will find that my friend Graham Hutton, who certainly has no Trappist tendencies, is one of the most articulate and, at the same time, one of the most intelligible economists I have come across. Even I can sometimes understand what he is getting at. He also has a very wide range of interests far beyond the more detailed subject. Without more ado, I will ask him to address us.

LECTURE

BY technical defences I mean the latest and most complex 'hardware,' electronic, and other items of defence. I am interested in their implications for different nations' economic systems because they have become, and are increasingly becoming, so complex both in manufacture and functioning that our older, traditional ideas about military and civil manpower, and proportions of national incomes devoted to military and civil sectors, must quickly undergo radical changes.

Let me give an example. I estimate that roughly one-half of what can be called the national incomes of ancient Egypt, or a Greek city state, or a medieval cathedral-building community, or a Mexican community of a thousand or more years ago, went in pyramids and temples and religious or State edifices and their upkeep, together with their guardians; but not much went on instruments of war. Not much national income went on defence throughout the 21 years of the Napoleonic wars; perhaps about 5 per cent. of the British national income, and—because it was wastefully deployed—about 12½ per cent. of the French. But when we come to the 1914–18 War, and more so in that of 1939–45, we find entire nations caught up in the economics of offence and defence, so that—at one time—in Britain over one-half of the national income was devoted to the war effort, and enormous drafts were made (by way of loans and sales) on that nation's future productive powers. Finally, if we look at the various national efforts during only the past five or ten years for both national and international defence, we see that even in so-called peacetime—and even in the leading industrial nations whose productive powers have been streaking ahead so fast—the *proportion* of national output devoted to defence has risen to record heights, and therefore the *absolute* totals in economic terms to prodigious amounts.

Economists are nasty-minded mortals who count costs; so let me remind you of what has happened in only the last 15 years of so-called peace. Take the United States and Russia first. Their national incomes—that is, their yearly outputs—have doubled in volume, very broadly. In terms of money sums and manpower officially enumerated in armed forces, their defence efforts seem to have been considerably reduced. But two offsetting factors have been at work. First, what used to be called defence, or munitions, or armed forces' research, has increasingly been farmed-out into the civil sector, to industry or to universities and other institutions. Secondly, as their national outputs have grown, the same—or even

a reduced—*percentage* of national income devoted to any military purpose has meant an *absolute* increase in the resources used for that purpose. Britain, France, and Germany have pushed up their national outputs at varying rates, and different factors have affected each of them; but roughly the same over-all effect can be seen among them, too.

And now let me add the third confusing economic factor in all this. It is the parallel military development to what has much more clearly been happening in politics and economics; namely, the breaking of the sovereign bounds of the historic nation-State. Put in everyday words we can call it the ' take-over technique ' or ' merger movement '; the transcending of traditional national boundaries of sovereign military, or economic, or diplomatic effort, by the formation of like-minded groups of States.

The formation of these groups comes about sometimes voluntarily (as in the case of the Six and Seven, and N.A.T.O. and S.E.A.T.O., and so on), sometimes involuntarily (as in the case of Czechoslovakia and portions of far eastern Asia). Thus we have to sort out international pooling of economic and defence efforts from the purely national; we have also to sort out so-called defence research or activities from civil activities, nationally and even internationally; and finally we have to sort out national *proportions* or percentages of effort, under any heading, from national *absolute* efforts, according as each nation's growth—or even group's growth (look at the phenomenal rate of growth of the Six in Europe)—streaks ahead at differing year-to-year rates. For instance, so fast has been the growth of the Russian and German national incomes during the past five years that any fixed *proportions* thereof allocated for defence—or anything else—would mean five bumper yearly efforts in succession, each a new high record. And if, simultaneously, a country forging ahead like that sweeps some hundreds of thousands of trained men out of its officially enumerated armed services, but sweeps them, or indeed others to that amount, into para-military research or pre-military industrial establishments, it may *look* like a bit more peaceful co-existence, or a bit of disarmament; but it certainly won't *be* that, in terms of the country's defensive-offensive potential.

I should like to develop these thoughts further, if you will allow an economist onto sacred military grounds. Let me, as a foolish ignoramus in these matters, suppose that within the next (say) five or ten years all of us in the van of the industrialized nations—America, Russia, Britain, N.A.T.O., all of us—utterly do away with the manned, piloted offensive-defensive aircraft, i.e. that we retain manned aircraft only for minor military purposes. Suppose the reason for this, in the main, is that by that time we have perfected the new ballistic hardware, solved the problems of safely launching it (perhaps from space stations), and—at least as far as major wars and offensives go—we are in the ballistic era, looking at each other across imaginary fences, each provided with plenty of missiles to chuck at each other without having to transport them by manned vehicles through the air. Now look what follows. First, in the field of manpower, a lot of each nation's finest young men will not need to be carefully selected, screened, and trained for flight; and perhaps much older, more skilled, longer-trained men will be needed to look after the hardware, and keep it ready to go off. Next look at the so-called civil manpower situation. These bits of hardware, and all the necessary equipment for preparing and controlling and directing them, get more and more complex; which means that, instead of the nine men behind the line for every one in it in the early

1914–18 War, and instead of the 20 men behind the line for every one in it at the end of the 1939–45 War, we shall soon pass out of the present stage of roughly 50 men behind the line for every one in it—to what? I am not, of course, implying—I am not in any case qualified to do so—that there will be no 'lines'; I am sure there always will be, even if they are composed of wretched, irradiated survivors, or of fully protected and armoured ground troops awaiting orders to occupy blasted territories. But I *am* emphasizing the more subtle, economic implications of the rate at which technical defences are forging ahead; and for a moment I want to look at manpower figures.

The merging of national sovereignties into groupings which I just mentioned is important here. It is a parallel development from the same fast pace of technical progress. Consider our own problem of manpower in Britain's defence. Do not worry, for the moment, about any of our posts overseas—though they are economically very much a drain on our resources—except only our contribution to the collective defence of Western Europe through N.A.T.O. Suppose we have only to man-up our defence in these islands and around them, and on the neighbouring Continent. Now consider our available manpower and its present economic distribution. Broadly only a little over one-half of it, now, is in manufacturing industries and in coalmining. Only 3½ per cent. of it is in agriculture, which supplies us with over half our foodstuffs. Only 2 per cent. of it is in the armed Services, of all kinds and at all levels of training or function. Roughly 45 per cent. of it is in transport, administration of all kinds, distribution, and retailing, and what you might call getting things and people where they are wanted, in a highly integrated island community, heavily weighted on city life. Now you cannot raid agriculture, or industry, or the armed forces, to modernize or increase defence, or to meet offence. You can only raid this 45 per cent. of the working population engaged in what are termed by economists 'the service industries': i.e. the broadly 1,500,000 in central and local government, the 1,750,000 in transport (or *can* you?), the 3,250,000 in retailing and distribution, the 4,500,000 in commerce and finance and clerical work, and so on.

But observe; the trend everywhere—first in America, then Western Europe, and now even in Russia—is away from industrial shop-floor employment to white-overall and white-collar employment; by way of automation (so-called) it is creating new, clean jobs and higher consumption of goods and services—above all, services—for the mass of people; travel, entertainment, eating out, high personal mobility, home-owning and furnishing and decorating, and so forth. Our available manpower and womanpower is fully stretched already; and well the economists know it, for it is partly responsible for our export and balance of payments problems which so regularly recur.

And now, finally, consider the demands of rapidly advancing technical defences on this manpower during the next five or ten years. You need many more technologists and technicians than have been planned. You need many more of them in those expanding sectors of civil industry which are undertaking research and development capable of most important defensive uses. You need alongside the traditional, but developing, ground troops and all their impedimenta, including a lot of that hardware we mentioned earlier, the skeleton, fast putting on flesh, of the 'New Model' Army, Navy, and Air Force; the technical armed Services, servicing ballistic, spatial, and other weapons only as yet dimly perceived on drawing-boards. Then you need redeployment of a good proportion of the existing

civil industrial manpower to manufacture, control, and service—and then to replace—the new weapons. These demands are big problems for Britain; but consider what they represent for smaller nations. No wonder the bounds of sovereignty are broken, and mergers are the order of the day in trade and economics —which means manpower—as well as in defence.

Of course, some extra capacity is released as old designs or weapons are junked. We see the shapes of things to come in both the military and the civil branches of the aircraft industry, in America and France as in Britain. We see big mergers concentrating capacity for bigger, faster machines; and if manned flight drops out of military programmes, the released capacity will doubtless be taken up, as generally occurs in all civil industrial progress, by manufacture of the new ballistic or other aerially directed hardware. Nevertheless, I see the total demands of defence on our Western economic systems, or the demands of total and rapidly progressive technical defences, extending deeper and farther into our economic systems, simply because of their increasing complexity. (That is, I should say, in default of some internationally reliable system of disarmament or of armament control.) You cannot make armaments more complex, just as you cannot make civil machine tools more complex, without pushing back, in widening circles, your demand for more components, made by more skilled workers somewhere else; and all of such multiplying components must be brought together in the finished machine by more skilled operatives, who know how to make the whole thing work properly, as required, when required.

Here and there, in the past, you could shove a civil component into a military machine, and vice versa. When I was a boy at school in the first World War I was taught how to take down a German Zeppelin Maybach engine, and the uses to which boys could put parts of that engine beggared human imagination! I remember one figure from the Blue Book report of the Ministry of Munitions relating to British output of finished military aircraft in the year 1918. I doubt if anyone here realizes that we then turned out just on 20,000! But our Chairman remembers better than I what they were, those D.H.9s and Vimys and others; about the only thing on them that was mechanically driven was the prop itself!

Compare the contemporary big civil or military jet plane. £3,000,000 a time in today's money; over 50 separate, independently operating power-units; getting very near the limits of any human being's faculties on board to manage it without continuous forms of ground control; becoming, in fact, very quickly a kind of earth satellite or missile. This is a symbol of what is happening inside and between our advanced nations. We can no longer run them easily, fly them (as it were) by the seat of our pants, render them independently capable of defence and economic survival. We must, instead, dovetail their economic and political and military systems in with those of neighbours and friends; these wider, regional, many-nationed systems can only function well for their passengers if all the separate, independent but inter-dependent, power-units pull together, under proper controls and proper direction, from some base. At least that is the moral of our most rapidly advancing defence techniques, whatever may yet be the moral for the parallel, but more traditional, earthbound or seabound forces.

And now let us look at the economist's principal weapon—costs. Defence costs everywhere are mounting, for the same broad amount of defence effort. It costs more—whether in money or real resources, it's the same thing—to keep a Russian division fully manned and equipped and mobile than it did five years ago;

and as new and more complex and costly weapons for the division come forward, it costs more and more still, both in expenditure of a military kind by, or for, that division, and also of a civil kind to tool-up for, and manufacture, and then replace when obsolete, the new weapons.

I must say a word here about this bugbear of both military and business men, 'obsolescence.' Weapons of war lasted long when man's ingenuity in making them was limited to axes, bows and arrows, catapults, or even the first powder-fired artillery. The wooden walls of England lasted long. But this century, which saw cavalry riding with pennoned lances into harvest fields in August of 1914, has seen not only a bewilderingly complex multiplication of bewilderingly complex weapons of all kinds; it has also seen a bewilderingly rapid obsolescence of those weapons, gathering momentum year by year, until today what is only on the drawing-board is already out of date as compared with another drawing-board.

Let me tell you how this strikes an economist. Even as recently as in the 1939–45 War, a factory making weapons—say, tanks or aircraft—could install a new machine tool at a certain sum, flog the tool by shifts of wartime workers, and get permission from the Inland Revenue to write-off that tool and replace it with a new (and technically better) one more quickly than in peacetime, out of the money paid by the Government for the weapons; and in some cases such tools were written-off—i.e. used up, utterly consumed as pieces of capital—within two or three years, which is (or was) reckoned unprecedentedly rapid for any piece of capital equipment.

But nowadays, especially in these very technical defences, no economist could say about some machine tools or electronic or other apparatus whether they were capital or not; because their cost has to be written-off in the same accounting year wherein they were bought new; because, in turn, they get used-up in that same first year. As the weapons become more complex in components and servicing, and therefore more costly, a whole series of widening circles of industry radiate out from the final assembly factory; and in an increasing number of these dependent, but vitally important, sub-assembly plants or service depots, new and strange pieces of equipment and apparatus, costing more and more per unit, are installed and worn out within a year, or at most two.

This is only the industrial aspect of defence expenditure itself. Weapons and equipment obsolesce more rapidly; therefore a growing proportion of the total expenditure year by year is needed for replacement with newer types. Add the two obsolescences, the civil and the military, together, and you get a picture of the economist's anxieties. *Some* of the junked industrial apparatus *may* have a further, civil use. None of the weapons will. But the total of weapons now in production, and of all the apparatus making them, is inevitably expanding as, first, obsolescence of both weapons and tools accelerates, and, secondly, complexity of design and manufacture of weapons drives research, machine tool manufacture, electronic and other controls, and servicing deeper and deeper into the civil sector of industry, and even into universities and other civilian institutions.

I do not think enough attention in this country—or for that matter, as far as I can see, in America or Russia—has been given to the eventual, but by no means remote, implications of all this for the kind of civil society which is growing up around us, even in Russia. It is a society, as I said, increasingly heavily weighted on the side of leisure, travel, and other consumers' spare-time services, and the purveying to the mass of consumers of more durable goods and enjoyable services

of all kinds. It is also obviously a society wherein employees of the State multiply, and civil life takes on more and more of a mass, standardized, regulated, institutionalized nature; and that in turn means more clerical, administrative services, and white-collar jobs.

I do not think that our leaders of public opinion have yet strongly enough pointed out the rate at which conflicting demands upon our manpower and economic systems are building up inside our leading Western countries. We talk a lot about our educational system: the need to put through more university graduates; the need to train more scientists (not forgetting the humanities in their training) and more humane, urbane arts graduates for management (not forgetting the sciences in *their* training, either). Yet you do not find—not in Britain, France, and Germany, and only a little more in America—you do not find, in my judgment, enough attention paid in public to the *pace* at which our technical defences, and their demands upon our manpower and economic systems, are building up colossal challenges to our traditional ways of thinking, and behaving, and living.

Looked at from this technical, economic angle, N.A.T.O. and the O.E.C.D. appear much more important, of much more use, to us in Britain than they are normally painted. In my view, both as a simple citizen and as an economist, I consider them both absolutely vital to the continuing welfare and security of this country; and even if the military shield of N.A.T.O. were to become weakened—which I pray it never will—I would still say the same thing of the economic necessity to us of both N.A.T.O. and the O.E.C.D. Indeed, after all I have already said, you will understand me if I add that I cannot, by any stretch of my imagination, conceive of our people's being able in the future—the near future—to be sure even of its economic sustenance, let alone its present standards of leisure and consumption, without these imaginative first extensions of the old national sovereignty idea on to the new international, inter-allied, inter-dependent plane.

If I am broadly right in my analysis so far, we must indeed, as that great man Sir Winston Churchill said at the end of the last war, become "more mixed up together." He was talking of Americans and British. But his words were prophetic of the whole wide world. We *are* getting more mixed up together; unpleasantly and dangerously so in many instances. The mix-up is not always voluntary or planned; and on its present scale it seems so widespread and anarchic as to suggest the outcome, not of the inscrutable ways of Providence, nor even those of a malevolent devil, but rather those of some superhuman committee—committees being what we British well know them to be!

However, let me here emphasize the importance to all of us—indeed, if only everybody knew it, of all of us in the whole wide world—of this new, technical, international grouping of manpower and know-how and mechanical capacity; this inter-dependence of armed forces, industries, universities, civil servants, beyond the old traditional national bounds. Of course, it is only at its beginning. But, like these business take-over bids and mergers, it wasn't even talked about during the late war; and then suddenly it is part of our everyday organization, and our safety and our breakfasts and our leisure pursuits all depend on it to a rapidly increasing extent.

Do not be misled by what I call economic aberrationists (or, as our Russian friends might call them, deviationists); the rapidly multiplying number of sovereign States, most of them run by people with non-white skins, all trying to start Western industries of their own, all trying to own modern armed forces and other traditional

paraphernalia of sovereignty, do *not* mean that the world is splintering into independent units. Quite the contrary. It means more, not less, international trade; more, not less, give and take of technical know-how and other techniques; more, not less, international inter-dependence. Mark one bit of evidence. Britain's most prosperous foreign trade was never, and is not today, the trade between the least-developed countries and herself; on the contrary, our best customers and suppliers were always the *most* industrialized countries; our neighbours, France, Germany, America, the Dutch, Scandinavians, and Swiss. The more rapidly the so-called under-developed nations develop economically, the more international trade, not the less, will be forced upon their new industries and their healthier, better-off citizens.

I allow myself that digression because it bears upon the economics of technical defences. If it is true of civil trade, it is likely to be true of defence. I submit that we already see its beginnings in the international pooling of various technical know-hows—or is it knows-how?—in, for example, the aircraft manufacturing industry, in both civil and military nuclear engineering, in preventive (and defensive) medicine, in civil defence, and in standardization of weapons and military equipment or installations. Just as modern industry developed two centuries ago from Adam Smith's principle of the division of labour within one nation, so has international trade developed between nations on the same principle; and when modern defence techniques compel like-minded and neighbouring nations to pool their manpower know-how, or industrial facilities, indeed, even their armed forces, it is not really a big break, or a break at all, in a long and logical process.

But it does pose enormous problems. I can only mention some of them here; and they are naturally, in the main, economic. For example, when you " mix up together," say, the aircraft industries of Britain and France, and the State authorities own some of the equity in some of the concerns in one country but none in the other, there are legal and administrative, and even security, problems, all bearing upon the efficiency or performance of the companies. Or again, take military security itself. We economists would dearly like to judge the efficiency of the military aspects of nuclear engineering in this country; but we cannot get the appropriate statistics. Again, big international contracts for standardized weapons of an international defence grouping may be handed out not mainly on economic grounds but on political—for example, to help one country's balance of payments, and hang the efficiencies concerned!—or on strategic grounds.

Again, take the perennial problem of international military and industrial pooling. Who is to decide the differing proportions of national contributions? Do we go by the proportion of each nation which is in industry; or by the size of national income per head; or by the absolute size of each country's industrial capacity, *after* allowing for a standard of living of a standardized kind for each citizen in each country, all round? Some nations have more young people as a proportion (like the Americans), some have more old (as we have). Some have more land, some have more water. Some are good at this, some at that. How do you evaluate what each can kick into the kitty without really subjecting its citizens to a harsher sacrifice than citizens of other contributing nations are asked to make?

You do not need me to tell you today that these things are by no means yet established on an easy and amicable footing as between us and the French in

N.A.T.O., or as between the Americans and Germans. I can only add two things for your comfort. First, I really believe fewer people, and a steadily diminishing proportion, in our Western nations (including Russia) can be fooled about these matters, both by public and by private operators in the arts of fooling the mass of the people, as compared with ten or even five years ago; and secondly, every year accelerates the pace of technical advance in weapons and other defences, and no matter what vested interests of all kinds meanwhile say or do, the very demands of defence techniques inexorably push differing nations and their experts together. Indeed, most of the technical problems now visible above the military horizon are already too great to be solved by the Americans, or indeed the Russians, alone. (And, incidentally, that may explain a lot, but don't ask me to go into it here!)

It is high time I pulled the threads of my discourse together. Let me do it in a formal manner, by putting to you several propositions, which I take to be conclusions from my economic studies. I will set them out like this.

First, you cannot hold up science or defence techniques; you must move with the scientists. As in civil industry, scientists will widen human powers, and obsolesce human apparatus, at an accelerating pace. They will make apparatus more complex, and the particular units cheaper. Consequently, as we have seen with the A and the H bombs, it is only a matter of time, and not long, before virtually every so-called sovereign State will possess launchable and, in terms of what we have hitherto termed civilization, lethal international weapons. Accordingly, the parallel movements for the creation of groupings of States—the movement for like-minded defence, and the movement for pooling capacity and know-how—will also accelerate. In that grouping process lies hope. The dangers lie in the tensions between the groupings, which are mainly non-economic.

Secondly, however, the civil economic impulse—the need to trade—is not nearly so bound up with, or so confined to, these same groupings of Powers. Whether for raw materials or food, for new capital apparatus or goods for needy consumers, the nation-members of varying groups can profitably—that is, most economically—trade with each other on a non-exclusive, multilateral, general basis. The under-developed countries' urge to industrialize rapidly impels them to trade with developed countries, who have savings to spare. So the civil, trading trend to a large extent offsets what we may term the incivil tensions. We must therefore foster trade, everywhere, every way.

Thirdly, to a surprising extent all technical advances are still being made in what we call the 'West,' i.e. (including Russia) among the white-skinned nations mainly north of the equator, who between them own the available savings and capital for developments of all kinds. This predominance of know-how is not likely to last; but it is likely to last longer than any other single factor in the world situation—perhaps till the end of this century, perhaps even longer. We should never, therefore, lose from sight, least of all in this vulnerable little country, the crucial importance of quality over quantity. In terms of technical defences, or of civil industry, or of skilled manpower, or of university and other training, the greatest single national resource in Britain is mental quality coupled with personal fibre. That is true of the entire 'West' as already defined, with which we sink or swim, stand or fall, simply because that 'West' is so small, and so comparatively rich, a proportion of all humanity; only one-fifth of the world's people. Of that one-fifth we in Britain are but one-tenth, i.e. under 2 per cent. of humanity. If you now add in all Continental Western Europe you still do not make an imposing

—still less a will-imposing—union of nations. If you then add in the United States and Canada, you begin to get somewhere. But then add Russia to all of us—in a wild burst of co-existence—and the equation still leaves a lot of room for headaches for everybody involved in it. That is the scale of our problems.

But fourthly, both the new civil and military techniques—the new technical defences, as well as the new gadgets for consumers, and homes, and materials, and productive equipment for industry—all these new techniques are rushing ahead at such a pace that the changes wrought by them are revolutionary enough, and rapid enough, without warfare. Indeed, I sometimes think the rapidity of technical change takes even the breath of dictators and demagogues alike away. Who knows how long we shall need the Suez Canal? Who knows how long, here in the West, we shall need to have gas or electricity pumped into our homes or factories from generating stations, or if we shall not rather have little power-and-light plants of our own on the spot? Who knows how long it will be before the ordinary chap in the street can fulminate his neighbour, with whom he is arguing, by atomizing him in one blast, rather as, over 60 years ago, H. G. Wells's *Man who could work Miracles* told the policeman to go to Hell, and was startled to see him go there in a sudden fizzle?

Of course, I realize that military men, like economists and Chancellors of the Exchequer, have got to work with the facts and tools as they are, within the limits of foreseeable and (shall we say?) deployable resources. But it remains true that these immediate resources are being extended, pushed out, into realms hitherto undreamed-of, at a brisk pace. While that is happening, I am hopeful that the abrupt and extensive social, international, and other changes thus necessitated will occupy—nay, pre-occupy—the minds of all troublesome persons everywhere on this earth, so that the overwhelming majority of more restful mortals may live in peaceful co-existence with them, even if " as a strong man, armed, keepeth his house."

Let me leave you with one thought. War was once the calling of the soldier: the man who used capital in the form of weapons, and castles, and horses; the man who went forth against other such men and their capital equipment; but only accidentally across the lands of civilians. In our own day we have made war literally the affair of nation against nation, civilians against civilians, to the point almost of extinction, genocide, and perhaps annihilation of the human race. It is an odd thought—a typical economist's thought, perhaps—that in doing all this by our scientific ingenuity, we have well-nigh abolished the difference between wartime and peacetime, soldier and civilian, young and old. Old men, provided they were trained, could supervise the maintenance and the launching of the inter-continental ballistic missiles of the immediate future. By automating war and peace alike, we are fast assimilating the factory-manager and worker to the soldier, the old man to the young erstwhile air pilot, the women to the men, the sailor to the landlubber, and the hand that rocks the cradle to the hand that pulls the switch. The very phrase ' the nation in arms ' has come to have quite another, but a literal meaning; we are all ' under arms ' now, we are all in it together—as nations we are allied, as workers and managers we are caught up in the defence plans, as soldiers and sailors and airmen we depend as never before on others of our own or other blood to give us the right hardware or vehicles or materials, and as ordinary citizens we could not sleep of nights if we were ever to realize the growing extent of our and our families' dependence on the goodwill, skill, and watchfulness of others.

You will therefore allow me to conclude with one critical reflection; that in the light of all this it seems little short of remarkable that, in our own country, so little of it is ever proclaimed, so little realized, so little admitted. Truly we British live happiest in our ignorance. But I do not think the march of events I have described will leave us happily there much longer.

DISCUSSION

THE CHAIRMAN: I should like to start off by asking two perhaps rather amateur questions. When we were involved about ten years ago in the rearmament programme at the time of Korea, one thing that was more or less engraved on the hearts of the Chiefs of Staffs were the words ' metal-using industries.' It was not said so much that we could not have the money for this, that, or the other; what was said was, " If you want to do this, it is going to have a fatal effect on the metal-using industries in relation to the export trade." I sometimes feel that some of those people who want to go in for a nuclear disarmament and to build up a conventional deterrent, which, I suppose, would be perfectly possible if we were prepared to pay the cost, do not consider the possible effect on the export trade with particular reference to the metal-using industries.

Another thing is the business of the burden on our balance of payments by having to pay £60 million a year into the German economy. I have sometimes wondered in the past, having rather a nasty suspicious mind, whether the Treasury are not habitually pulling rather a fast one on us over that. These payments of £60 million a year in hard currency are to pay for the B.A.O.R. in Germany; at the same time, the Americans pay something of that order in dollars to us for the maintenance of their forces in England. I have sometimes wondered why we could not do a deal with them on that basis. I have a strong suspicion that there are two reasons; (*a*) that it is a jolly good excuse for the Treasury to say to us, " We have to economize, so you have to cut down forces in Germany "; and (*b*) because it is a good way of earning dollar exchange.

THE LECTURER: I suppose that this problem could be attacked, if human beings were rational, by setting up pools or buffer stocks. The whole point can really be answered in Sir John's second question. It really comes to international contributions for a common defence purpose. The arrangements that are still being made are on the basis of separate little national sovereignties and separate little national currencies, which involve unnecessary transfers across the exchanges. We are only at the beginning of these big regional *blocs* for defence and economics. The Six on the Continent have got into this difficulty already. They first got into it with a common commodity, coal, because of over-production. After coal, it was the problem of the very strong mark and the less strong other currencies in the Six. If we were all rational one would expect an international accountancy for these things at a common clearing house.

We have not got to such a stage yet. If we had, President Kennedy's problems would not be what they are today of defending the dollar. The very phrase ' defending the dollar ' was unthought-of 24 months ago. In a defence *bloc* or pool like N.A.T.O. it should not be above the wit of man to say, " Your contribution is so much; on such and such a territory; and such and such a currency is used. We debit you with so much; you debit us with so much; and on balance, whatever the credit is, we take it out in terms of tourist travel, exports of commodities, raw materials, whatever it might be." You could say, " I will take your steel," if you are short of steel, as occurred to us only 12 months ago, when we were importing Continental steel into this country for, above all things, the British motor car industry.

The trouble is, we have moved into this regional grouping era at a time when all our loyalties and emotions are still keyed to national tunes. If we did not feel so badly about it, as Germans, French, British, or Americans, we could easily say that we were setting up a central clearing house for debits and credits, and in this clearing house, under a set of international economists—" sophists, economists, and calculators," as Edmund

Burke called us 165 years ago—we could easily set up a sliding scale for these different contributions.

I am afraid that the short answer to Sir John is that it requires an even greater amount of international civil service expertness than we have as yet managed to get out of the national civil services.

SIR JOHN ELDRIDGE: Does not this trend lead towards totalitarianism in some degree, because of the centralization which is necessary to do this sort of thing? I will give you an instance. Some seven years ago we could not get stainless steel for the Ministry of Supply because we wanted nickel for it. We could not get nickel for three reasons: first of all, because the United States was stockpiling in a big way; secondly, the motor car industry was expanding enormously and wanted nickel for chromium-plating, and thirdly, everyone wanted it for current armament demands. The obvious thing, which has since happened, would have been for the nickel producers to expand their output very considerably but, being private concerns and very properly cautious of expanding beyond what they would be able to maintain later on, they would not do so. You can only compel chaps to do that sort of thing in one of two ways. One is by subsidizing them in a big way and making it very much worth their while; the other by the Government concerned telling them they have to. I give this as an example of the sort of thing that already has happened. Does not this great centralization, this necessity for dealing with larger and larger resources, centralizing them and swopping between nations, lead to more and more government control, even possibly to the extent of totalitarianism?

THE LECTURER: As answer to the last part first, I do not think it need. Let me put it this way. In war-time, governments everywhere had these powers. When the American Government found the allied effort in the war was short of particular things—I forget what it was; at the time it might have been Du Pont or International Nickel, or Alcoa for aluminium—they stepped in and said, "We will build the plant. You operate it under a management agreement. But it is our property and, after the war, if demand rises and people want more of this stuff, you come back to us with the plant and we will then let you have it at market price."

It becomes difficult in peace-time when a regional group is short of one particular thing, the supply of which is in one country's position or power to increase. I think the correct procedure would be to estimate the need, put it into the hands of an international group to build the extra capacity on amounts subscribed, not by shareholders but by the governments concerned, and then let the group run the thing on a terminable management basis, renewable every few years.

SIR JOHN ELDRIDGE: In other words, to some degree create another industry or expand on a government basis?

THE LECTURER: Yes. It is really capable of extension to the whole concept of research and development. All research and development for defence purposes under various governments' responsibilities proceed in publicly owned places and, the great majority, in privately owned places. Just as there are State security measures for things like that, there could also be economic agreements with the State about it. I do not think it necessarily means that the day-to-day management of a private plant making explosives, or producing rare alloys for bearings, will tend to come under centralized political control. It becomes extremely difficult to do it sometimes, of course. But I have great sympathy with Russian factory managers. Some of them are placed in the most frightful position by impractical, centralized State requirements of certain kinds—specifications and so on. When the orders get down to shop-floor level the managers say, "This is impossible. These chaps at the centre do not know what they are talking about." That kind of row is going on in Russian technical journals the same as it is in Wisconsin or anywhere in Britain. I take comfort from this. With the greatest State centralization yet seen in the world in Russia, you have had to decentralize to make it work at all.

MR. JOHN GRANT: There is one thing on what you were saying: you were basing most of your case on the increased need for hardware of increasing complexity. I am a complete amateur at economics, but I am not sure that the main problem is not really that of manpower, because if you study the estimates nowadays, you find—and it has happened in the last two years—that the cost of feeding, paying, maintaining, and moving the manpower of the armed forces, anyway of the Army, occupies more than half of the Army's budget. Therefore, if you want to make a quick increase or decrease in military effort, you cut or increase your manpower; that is the quickest way to do it.

Also, we face the fact that, although hardware in general has a role in deterring aggression, the real fighting that in fact occurs is done by men and rifles, so we are getting a division between deterrent forces which are based on metal largely, and fighting forces which are largely men, and I am not sure that the emphasis in future defence will be quite as much as you said on weapons. I think that manpower, its deployment, its use in the civil economy, etc., is going to be the more important of those two very important factors.

THE LECTURER: If you look at the general end product, defence forces, they are divisible into two main kinds; the modern, highly technical ones and the old ones. Now the older-fashioned weapons are being caught up in applications of the newer techniques; for instance, artillery. You then look farther back, as an economist, and see that circles of manpower radiate backwards, deeper into the civil sector. If you only had to produce supplies for the officially enumerated armed forces, it would be quite easy; but it is not. What is happening in every developed Western country, and in those groups like N.A.T.O., is that planners and designers are driving more and more into the civil sector for technologists, technicians, managers, and skilled men and women of all grades. They are driving demand for manpower, not for trained and uniformed manpower in the defence forces, back into the civil sector for design, production, servicing, research, equipment, and everything else. When I look forward five or ten years from this point of view, I think a lot of comfortable, ordinary consuming and voting citizens in this country are in for a shock. Either we shall have to become infinitely more productively efficient (raise our productivity per man very considerably—that is to say, increase our savings and install them in automating machinery and so on) to be able to produce all this extra technical stuff that will be required; or we shall have to forgo some of our present standard of living as a people.

Luckily, technical research, both civil and military—they are all one now—is now going on at such a rate that it holds out prospects to the civil part of the economy of being able to step in with new methods and machines to raise productivity. We can, in fact, already utilize semi-skilled and, of course, skilled men and women, in white overalls in very lush-looking halls with dials all round them, heavily automated and electrified, to produce what we should have had to produce in the last war with dirty-overalled chaps. At the core of my talk lies the wonder of an economist at the resilience of the economy of a modern industrial State. We can all enjoy the meals we get and utilize the private cars we have, and the public services; and yet, simultaneously on the grim side of war and defence, we can pool our know-how, manpower, and skill to such an extent that we can envisage a vast international scale of defence operations, infra-structures, etc. Most people in this country do not know on what economic magnitude we are envisaging and preparing them. I should be a little happier if these matters were more ventilated for the attention of ordinary people. They are supposed to be voting on them. We even use the word 'vote' in the Budget, for allocating revenue to defence; but nobody thinks of it as being the common citizen's duty to consider and discuss these more technical, economic things. The fear behind the question about centralization, totalitarianism, and authoritarianism coming about in a modern Western democratic industrial State is perhaps more likely to be realized from the complacency, negligence, or nonchalance of the ordinary citizens than from the fewer experts, civil servants, and politicians.

SIR JOHN ELDRIDGE: On the question of what one might call reverse lease lend; from the aircraft, which was originally a military vehicle, came transport aircraft; from

radar came the Jodrell Bank telescope; from guided weaponry—electronics—has come the computer. Is that reverse lease lend of any real significance, or just a drop in the ocean? Does all this defence research, which goes on at enormous expense, have any valuable impact on the civil economy as distinct from military economy?

THE LECTURER: Indeed it does. I do not think an economist would try to distinguish between the two sectors of research. I do not think it is a practical distinction to make. Take the most topical thing, the Russians releasing this satellite from a space station, aimed at Venus. It is obviously capable of both uses. So is all knowledge gained from it. You can use it for all kinds of civil purposes. You might use it to affect the climate on earth. If a military man were doing research in a back room with other boffins solely for his military purposes, his results would still be capable of civil uses. I do not know of any kind of research that is not capable of civil uses. By the very nature of all research you are pushing the frontiers of human knowledge farther and farther ahead.

COLONEL LYALL GRANT: You said that the six members of the European Economic Community were making a rapid economic advance; you also said you thought that the future of defence production lay in larger regional groupings. Do I understand that you think that, from a defence point of view, this country should take steps to join in, if they can, with the European Community?

THE LECTURER: No, I do not think that follows. In terms of N.A.T.O., you have an extraordinary disparity between West European nations; the Swiss and the Swedes, because of their neutral policy, cannot come in. But in terms of O.E.C.D. or the Six and Seven, they can enter the economic arrangements. Both the Swiss and the Swedes happen to be in the E.F.T.A. Seven. The Six in the European Common Market happen to be, all of them, in N.A.T.O. We are also in N.A.T.O. but two members of the E.F.T.A. are not in it because of their neutral policy. So there is no real dovetailing between all of us. For economic purposes we can count on Austria, Switzerland, and Sweden; but we cannot count on them for defence purposes because they are neutrals. So, naturally, the greatest number of people who are in the biggest defence *bloc*—S.E.A.T.O., N.A.T.O., wherever it may be—organize that part of their economies which is keyed to their defence effort in a complementary manner. But you could not do that in the Seven because you cannot use Switzerland or Sweden. This does not mean that we therefore ought to go in with the Six for trade purposes *because* we are allied to all of them in N.A.T.O. It simply means everything would be much easier if there were no splits in Europe. The defence split will remain as along as Sweden and Switzerland are neutral. But for trade purposes, if there were no split, it would be much easier to organize financial calculations for everyone's contributions to the common market if there were one big European common market and we were not divided by tariff differences, etc.

THE CHAIRMAN: You talked about a clearing house in connection with, particularly, finance and the barriers of currency. Another great difficulty from the point of view of the economics of defence is the know-how problem. For example, we feel that we must go in for producing a nuclear submarine or a supersonic aircraft because, although we might be able to buy it from America, by not producing it ourselves we would lose terribly valuable know-how. I think that I am right in saying that, four or five years ago, there was a move in N.A.T.O. towards making some kind of clearing house for know-how. There was an American scientist who was going to preside over some kind of Committee and try to iron out that sort of thing. I do not know if it is a hopeless kind of thing to think of.

SIR JOHN ELDRIDGE: There was, and it went a little way. There was an arrangement by which any nation should lay its information on the table and everyone could barge in and say whether they would like to have it. It went somewhere, but not very far. The question was mooted; there was a start made on it but it was not successful.

THE LECTURER: Do you not get to the bounds of that difficulty when you get to the old concept of national security? This always pops up at some point.

SIR JOHN ELDRIDGE: That is where it broke down.

THE CHAIRMAN: And trade secrets.

THE LECTURER: Yes, it is almost the same thing. You cannot refuse to offer to a chap who is in a pretty safe area the whole job of some enormous engineering know-how, just because his factory *is* safe.

Against that, however, there is this accelerating pace of research. It is creating problems for accountants and economists that have never occurred before. Take, for example, writing a thing off 100 per cent. in one year. When you write a thing off 100 per cent. in one year, it is not capital at all technically. It is a tool that disappears in one and the same year, so it is a consumption good from an accountant's point of view; it ceases to be a capital good or tool. You just charge it against your revenue, and the Inland Revenue people have to let you do so because of this pace of obsolescence. No single nation engaged in a pretty heavy programme of research can hope nowadays to stick to the results of it for very long. How long did the Americans have the lead in nuclear-powered submarines? Quite a long time. Whatever the next technical dish put before us, its recipe will not be a monopoly for so long.

COLONEL LYALL GRANT: A point that ought to be made on the question of know-how is that you cannot hand over know-how until you have actually done it; you do not really know how. That is a practical fact.

THE LECTURER: I am not quite so sure about that. Take the supersonic civil aircraft on which a considerable amount of money and research has been, and is now being, spent. You are getting very near the point where you cannot actually fly one until you have made it; and it is no longer a question of making a model or mock-up. You just have to order the thing in quantity off the drawing-board. And this is happening with a lot of things. When you get to that rate of accretion of knowledge—the speed of it—there is not much possibility of keeping anything secret for very long.

THE CHAIRMAN: We have had a very interesting discussion and we are most grateful to Mr. Hutton for putting it so clearly and so well. I am not going to attempt to sum up, because it is a subject on which I simply do not know enough. I would just close the proceedings by leaving with you an amateur but not entirely irrelevant thought.

It always gets my goat when people say that we cannot afford to be strong. It seems to me that the whole history of the last 50 years shows that what we cannot afford to be is weak.

I looked up a few figures of the 1960/61 Defence Estimates and they were £1,617 million. Of that, £776 million went on what they called the inescapables, mainly pay, pensions, and food for Regulars, reserves, and civilians with the Services. That is nearly half the total going back into British pockets and tummies. £650 million was on production, a large proportion of which was wages for more British pockets and tummies. That altogether is £1,400 million going straight back into our pockets, for the employment, food, and wages for 850,000 people in the defence industries and 500,000 in uniform. People say, "Are there not more useful things it can be spent on?" I am sure there are. But it is bad enough to have to spend all this money on defence without exaggerating the results; let us get it in proper perspective.

If we look at some of the other things we spent money on in this country in that same year, the teenagers in this country spent £830 million, £160 million of which was on clothes and shoes, and £30 million on sweets and ice creams. In that same year we spent £1,061 million on smoking, £939 million on drink, £75 million on football pools, and about £400 million on betting.

If you add those up, you find that they come to about 50 per cent. more than the total Defence Estimates. Although that may not be strictly relevant to what we have been talking about, perhaps it will put the thing a little into perspective.

Thank you very much for a most interesting afternoon, Mr. Hutton. (*Applause.*)

WESTERN DEFENCE IN THE 1960s

By R. H. S. CROSSMAN, ESQ., O.B.E., M.A., M.P.

On Wednesday, 1st March, 1961, at 3 p.m.

MICHAEL HOWARD, ESQ., M.C., M.A., in the Chair

THE CHAIRMAN: Mr. Richard Crossman is no stranger to this Institution. Many of us have heard, and more of us will have read, the three brilliant lectures on psychological warfare which he delivered here some years ago and which, reprinted in the JOURNAL of the Institution, are now more or less the standard text for our forces on that difficult subject. It will also be no news to the members of this Institution that Mr. Crossman, in collaboration with some 11 of his colleagues, has recently been engaged on the task of trying to devise a defence policy which will be equally acceptable to all members of the Labour Party. We can sympathize with his failure without entering into the contentious debate as to where exactly the responsibility for that failure lies.

But Mr. Crossman is not here this afternoon as the representative of any particular Party or political group. We welcome him as a man whose outstanding intelligence, intellectual honesty, and long experience of political life are adequate guarantees that any contributions that he makes to the continuing debate about Western defence policy will be outstanding, stimulating, and illuminating. It is, therefore, with the greatest pleasure that I invite him to deliver his lecture this afternoon on "Western Defence in the 1960s."

LECTURE

LET me at once confess my lack of qualifications for talking about Western defence in the 1960s. I was a civilian throughout the second World War. I have not even the book training of having studied strategy or read military history. I am, however, what is called an intellectual; and, ironically enough, this means that, by modern American standards, I am fully qualified to write a long book on the theory of nuclear warfare.

One of the strangest features of American life in the 1950s—which no doubt will continue throughout the 1960s—is that many of the experts who lead the discussion on the nature of war have no experience in it or training for it. Is that habit spreading to Britain? I fancy that, before the war, this Institution would have hesitated to ask somebody in my position to give a lecture on Western defence in the 1930s. Intellectuals—particularly intellectuals out of uniform—were not wanted at that time in serious military discussion. Indeed, the dislike of them went so far that any unfortunate serving officer or retired officer who studied the theory of war seriously, and was consequently suspected of being an intellectual, did not have much of a chance. I will not mention names.

Today, however, the situation is very different, and for a very simple reason. Since the weapons which it is assumed will be decisive in the next world war have never been used, except on two occasions, and then against an enemy without means of retaliation; since the strategy to be employed has never been tested; and since the whole character of the next war is assumed (I shall query this assumption later) to be totally unlike that of any preceding war, all three American Services now employ pure—or impure—intellectuals to discuss its nature. Indeed, things have gone so far, I gather, that anyone with experience of previous wars or previous fighting is written off, owing to that experience, as out of date, biased, or prejudiced.

I was very struck the other day when I was talking to one of the most famous strategic pundits of America just before he went to the White House to join

Mr. Kennedy's staff. I said to him in conversation, "Did you ever in your life go near the Army or hear a shot fired in anger?" "Of course not," he said, "one would hardly get to my position if one had." I know he was joking. But it's a remarkable fact that a new profession has been created in the United States, the profession of war gamester. His job is, by the severest and most abstract kind of hypothetical logic, to work out the possible moves and counter-moves of nuclear war and on this basis to suggest to the politician and the practical soldier what strategic decisions they should take. The qualifications of a war gamester combine those of a chess player and a soothsayer. He needs a clear mathematical mind, which can abstract itself from all human considerations, assimilate facts like an adding machine, and then, with absolute predictability and accuracy, produce the logical conclusions from the particular sets of facts which have been fed into his thinking machine. The war gamester, in fact, is a human computer.

I am frankly horrified by the thought that the strategy and the foreign policy of our strongest ally should be seriously influenced by the kind of books and papers to which I am referring. Moreover, although I have admitted that I am an intellectual, I must now add that I have two disqualifications which would always have prevented me from becoming a war gamester. The first is that I am a practical politician and I now know something about the way political decisions are arrived at. The second is that, in the second World War, I spent some three years attached first to A.F.H.Q. Algiers and then to S.H.A.E.F., and in these two Headquarters I learned at first hand a little about the way that military decisions are reached. So I know something about the stuff of human nature in politics and in war.

I hope that this experience, which disqualifies me from joining the American war games, may qualify me, in your eyes, for discussing the relations between politics and strategy. Here in Britain, thank goodness, we still realize that, although scientific and technological development may substitute the machine and the computer for human activity, it still remains true that the final decisions must be taken by human beings, and the humble study of human nature still remains the criterion of wisdom, whether in a general or in a politician.

In this country we still believe that no war gamester, thinking in the abstract, can teach us much about the decisions which Presidents, Premiers, and Chiefs of Staff have to take. For those solemn decisions are often neither technical nor complex. At least, that was my experience in that no-man's-land between strategy and policy, between the soldiers and the politicians, where I lived during the war and which I have revisited from time to time since 1945. Most of the decisions which have proved to be real turning points in modern history were neither purely military nor purely political. They were a mixture of both—and this applies not only to the topmost decisions but also lower down; on the level, for example, of the Commander-in-Chief of an expeditionary force or the British representative on an international commission. To be a successful commander, a soldier has to understand the nature of the politician's problem, and vice versa.

Let me start, therefore, with a politician's reflections on the title of this lecture. Would I be right in assuming that implicit in this title is the assumption that Western defence includes the defence of Britain and of British interests; that when one says "Western defence in the 1960s," one includes in that concept not only the defence of these islands but of British interests throughout the world? Now that was not an assumption that would have been accepted without question even as recently as 1945. When Lord Attlee took over from Sir Winston, there was a powerful stream of public

opinion in this country, particularly on the Left, which believed that Britain's role in the post-war world should be to lead a ' Third Force,' which would stand between Russia and America, mediating between East and West and, if possible, preventing the world being riven into rival blocs. Indeed, it would not be unfair to say that, in so far as foreign affairs was an issue in the 1945 election, the mandate on which the Attlee Government was elected was against the integration of Britain into a Western alliance.

When, therefore, Ernest Bevin rebuilt the Anglo-American alliance, he did it against the natural inclinations of a large number of the back-benchers behind him in Parliament and a great section of public opinion outside. I do not want to discuss this afternoon whether, in fact, there was a possibility of a Third Force at that time. All I need to remind you of is the characteristic that dominated Ernest Bevin's political thinking. As a trade union leader, he had learned always to see where the real power was and to make sure that, in any fight he had on, the big battalions were on his side. As soon as he came to the Foreign Office he saw something which I, as an ex-member of General Eisenhower's staff, knew well. When the war ended, one of the few stable factors in Europe were the armies organized under Anglo-American integrated command.

There was some whisper in Anglo-American circles about the possibility of ' finishing the job,' and there is little doubt that, at the time, the Anglo-American alliance had the military power to ' liberate ' Eastern Europe had the decision been taken. Of course, I am not suggesting it would have been a wise decision or politically practicable. All I am arguing is that the physical power was at our disposal. 1945 was not a year when the West was inferior to the East in conventional strength. It was probably the last moment in history, indeed, when the West had the capacity to enforce its will by a superiority in conventional weapons. And behind that military strength was the enormous, co-ordinated war economy that had been established not only in the North Atlantic but in the Mediterranean and the Middle East as well.

On the other side of the world there was an equal and opposite reality, whose nature Mr. Bevin was quick to realize—the implacable hostility towards the British Empire developed by the Soviet Union. At the time, I was one of those who believed passionately in the Third Force, but our difficulty in persuading the Labour Government to take our views seriously was the lack of evidence to support our belief that, if Britain tried to act as leader of a Third Force and mediator in world affairs, either Russia or the United States would accept her. I say " either Russia or America " because it is sometimes forgotten that, during that first dreary post-war winter, there were strong forces in Washington (though they did not include President Truman) who favoured the achievement of co-existence with the Soviet Union at the cost of the old ' colonial Powers,' including Britain. During the war there had been plenty of evidence that Mr. Roosevelt and his Chiefs of Staff were constantly suspecting Sir Winston's motives in urging a Mediterranean strategy. They thought his aim was not to win the war but to promote Britain's imperial interests after the war, an objective in which they had no interest. Indeed, at Yalta Mr. Roosevelt seemed on occasion to regard himself and Stalin as the two progressive statesmen whose job it was to share world leadership and put the old colonialists in their place.

True enough, even Mr. Roosevelt, just before he died, was shaken in these assumptions, particularly by Russian behaviour in Poland. But Mr. Truman's decision abruptly to terminate Lend-Lease in August, 1945, suggested that, though his suspicions of Stalin were strong, he still regarded Britain as a strong and dangerous

rival and not as a partner in urgent need of assistance. It was Ernest Bevin who changed this atmosphere in Washington. Deliberately he shattered any chances that remained of an American–Soviet *rapprochement* and sowed that mustard seed of suspicion in the American mind which grew up into the great tree of the cold war. The Persian crisis gave him an ideal opportunity to swing an America, only too anxious to retreat into disarmed neutrality, into acceptance of its responsibility as the leader of the Western alliance. From that *ad hoc* Anglo-American alliance, with its limited objective of forcing the Russians to withdraw from Azerbaijan, there grew the Truman doctrine, under which Greece and Turkey were taken over as responsibilities by the U.S.A. Out of the Truman doctrine of 1947 grew the Anglo-American airlift of 1948 and the N.A.T.O. alliance of 1949.

I think we should all agree that, in the conditions of 1949, Ernest Bevin was right in regarding the construction of N.A.T.O. as essential to the defence of these islands and of Western Europe. But is there any case for revising this assumption in the new conditions of the 1960s? One answer to this question is to reflect for a moment on the Suez venture, which showed the difficulty for Britain of trying to ' go it alone ' in military terms. We now know that it was only three days before the American Treasury was able to bring Sir Anthony to heel by a direct threat to the pound, combined with the prospect of something approaching oil sanctions. From this point of view, Suez was a painfully unsuccessful experiment in military independence, which is not likely to be repeated by Britain. And the fact that the bitter ill-will engendered on both sides of the Atlantic by this episode was so rapidly dissipated demonstrated what a profound common interest Britain and America both had in maintaining the alliance.

Yet it cannot be denied that, during the 1950s, this conviction that N.A.T.O. is a good bargain for Britain has been undermined. And the chief reason for this deterioration is the nuclear strategy, on which I shall have some remarks to make at the end of this lecture. For, if I am to be convinced that the defence of these islands should be based upon the Western alliance, then I must be able to assure myself that the strategy on which the defence of the whole alliance is based, (*a*), does not commit this country in peacetime to nuclear threats, whose fulfilment would mean national suicide, and (*b*), gives us a reasonable chance of survival in case of actual war. Any sane man who could not be sure on both these points would at least have to ask himself whether N.A.T.O. should continue to be the basis of our British defence policy. But, provided we can be reassured that the Western alliance does not fail on these two tests, it is difficult to deny that the terms on which America is committed to the defence of Western Europe under the N.A.T.O. alliance are a good bargain for this country.

But what about the rest of our defence interests? One of the things which strikes me when I listen to the defence debates in the Commons each year is the way in which they tend to concentrate on N.A.T.O. and Europe, as though this country's defence policy was predominantly concerned with Europe and the Mediterranean.

Yet Great Britain is something more important than two islands off the coast of Europe, and obviously we do have other defence problems. Indeed, this was made very clear by Ernest Bevin in 1946. For, at the self-same moment that he made it his major objective to commit the Americans to the defence of Europe (he defined this to include Greece and Turkey), he was taking endless trouble to exclude America from any political influence in the Middle East. If there was a motive in Mr. Bevin's mind as strong as his will to get the Americans into Europe as the senior partner in

the Western alliance, it was his determination to keep British predominance in the Middle East and persuade America to play the role there of our junior partner. Of course, he would have liked to have American troops, but only on condition that they were there to assist him in enforcing his own Palestine or Egyptian policies, and his own ideas for securing our oil supplies. And when it became clear that no American President could ever play this humble role, Ernest Bevin decided that Britain, out of her own resources, must at all costs hold the Middle East. "Out there I am fighting for the British workers' standard of life," he used to say to us in the Parliamentary Labour Party. "Unless we are prepared to see a cut in that standard, we just cannot afford to lose Persia."

So, even in those difficult post-war years, when we were desperately weak and desperately in need of an alliance which firmly committed America to our defence, there were still areas in which we were prepared, if necessary, to act on our own and to maintain an independent Imperial strategy, distinct from and, if necessary, in conflict with that of the Western alliance. This applied not only to the Middle East. Bevin envisaged Britain as a great military power in the Far East as well, operating from a naval base at Singapore and still playing a role in the defence of Australia and New Zealand. And he also accepted heavy defence obligations in many parts of Africa.

Any attempt, therefore, to define Bevin's defence policy simply in terms of N.A.T.O. or the Western alliance leaves out a vital element of it. He at least was too canny to assume that either the Americans or N.A.T.O. would feel an unlimited obligation to look after British interests in the Persian Gulf, in Africa, or in the South Pacific.

Of course, much of the Empire the Labour Government inherited has since been given up, and with it the strategic commitments it involved. But the defence of the scattered remains of a great Empire may be more burdensome than the defence of its earlier unity. Certainly today we cannot reckon that any of our allies are vitally concerned to preserve what British interests remain in our areas of previous suzerainty. So we have to postulate that there are two disparate and conflicting elements in British defence policy, (*a*), the defence of Western Europe and the British Isles, which takes place within the Western alliance, and (*b*), the defence of purely British overseas interests which must be covered by British forces and a British defence policy outside S.E.A.T.O. and C.E.N.T.O.

You may complain that I have been labouring the obvious. If I have, it is because of something very puzzling which seems to follow from it. Here on these islands we have a people with limited manpower and limited resources, who have inherited the task of defending what are still vast British interests outside Europe, on which our influence and prosperity depend. One would have thought, therefore, that our strategy would be designed to ensure that, while we made a fair and full contribution to N.A.T.O., we should make sure that the fulfilment of this European commitment did not prevent us from looking after our non-N.A.T.O. commitments. In particular, it would seem obvious common sense that our contribution to N.A.T.O. should, if possible, be made in terms of equipment and trained manpower that can be used both for European and for Imperial defence.

Yet in the 1950s exactly the opposite decision was taken. A few months after Suez—possibly in reaction against it—the new Sandys defence strategy was proclaimed and the decision was taken to run down a large part of our conventional forces and to give top priority to the effort to maintain Britain as the third nuclear power,

with its own independent nuclear deterrent and, as a backing to this strategic threat, to build up ' nuclear streamlined forces ' in place of the conscript army that we had kept in being since the war.

This afternoon I am not asking what value the independent British deterrent has for the defence of the West in its role as an addition to the American deterrent; that is a separate subject. No, I am asking a much simpler question. What value has the British independent deterrent for the second of our two defence objectives, the defence of British overseas interests throughout the world ? I have asked many people in high positions this question, without receiving even a remotely satisfactory answer. Perhaps I shall get one from you this afternoon. In the Persian Gulf, in Singapore, in Hongkong, in the crisis which may blow up at any moment in Central Africa or Kenya—will our V-bombers, with their H-bombs, be of any assistance whatsoever ? Where in the world can we find one point at which the Sandys defence policy strengthens our Commonwealth position ? Ironically enough, a strategy designed chiefly to maintain Britain as the third Great Power has made us a minor nuclear satellite of the United States and finally destroyed whatever capacity we still retained to remain a Great Power in terms of military defence.

What were the motives which prompted this extraordinary decision ? I shall have one or two tentative answers to this question when I deal with nuclear weapons at the end. Now, however, I want to indicate the second part of this unresolved puzzle. We have concentrated since 1957 on making ourselves the second nuclear power of the Western alliance. In view of the political necessity to prevent a sharp growth in the annual defence budget, this decision was accompanied by drastic economies in conventional weapons and conventional manpower: the Government decided to abolish National Service and to build up a purely Regular Army. Again, I do not question here the long-term goal. My puzzle is this. How could a responsible Government announce its decision to end National Service when the nuclear tactical weapons which were to be the substitute for conventional forces were not yet in production ? How could the Minister of Defence, in 1957, make the security of these islands depend on weapons, many of which have not yet gone into production four years later ?

Moreover, once the decision had been taken, it faced the country with a dilemma. If there is to be no National Service; if the size of each Service is to be limited to the number we can afford to persuade to become Regulars; if, on the other hand, it is out of the question to go back on our commitment to maintain four divisions or their equivalent in Western Europe; if all this is true, it is surely clear that the only alternative to reintroducing conscription will be a ruthless cut-back of our Imperial commitments. I am not, of course, saying that this cut-back will take place. I am merely saying that it may be forced upon us by the decision to rely on all-Regular forces of limited size.

I am aware that one or two of my colleagues, on both sides of the Commons, have suggested as an alternative a further withdrawal of our forces from Germany and the maintenance of what would in that case be merely a token contribution to the S.H.A.P.E. Army. I find it difficult to believe that any British Government, whether of the Left or the Right, could take this action. After all, the French decision to permit German rearmament was only extracted from them by Sir Anthony Eden's solemn pledge to keep four British divisions in Europe for 99 years. And if there are some people who say we need not be too conscientious about keeping our pledges, since so many of our European allies have defaulted on theirs, I would remind them

of an even stronger argument. The West German Army is already some eight divisions strong and within the next year or two will achieve its full strength of 12 divisions. Compared with this, our contribution, whittled away by successive reductions, is now dangerously small. To reduce it still further would be to surrender to the Germans any influence we may still possess over the strategy and defence policy of the S.H.A.P.E. armies.[1]

So there it is. Since we must not and dare not whittle away our N.A.T.O. commitment any further, the dilemma which faces us is extremely acute. Of course, that dilemma has been there ever since 1957. At first, however, it was deliberately played down. Indeed, this is the first year in which it has become quite respectable to admit that this is the greatest single defence issue which faces this country today. In any case, it is essential that the British people should be brought face to face with reality and consider the two alternatives in all their unpleasantness. Either we are determined, at all costs, to maintain what is left of our Imperial defence obligations. In that case we must be prepared to pay the price by raising the minimum manpower required to cover them, even in ways which are intensely unpopular.[2] The only alternative is to do something equally unpopular and admit that, since we haven't got the men, we must cancel the commitments. Perhaps I should add that there is a third possibility—to continue carrying the commitments in the hope that we shall never have to honour them, and then find ourselves unable to do so when the moment of crisis comes. No one is shameless enough openly to recommend that we should adopt this third possibility, that we assume the obligations of a Great Power and have not the will to honour our bond. Nevertheless, it is difficult to deny that something uncommonly like this is actually happening today.

I now turn to the other half of our problem, the defence of these islands within the Western alliance, and I want to start by asking why it is that N.A.T.O. is disintegrating before our eyes? The precise figures of the targets agreed at Lisbon

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[1] Since I gave my lecture, Lord Lambton, in a remarkable pamphlet entitled *Inadequacy*, has alarmingly confirmed this warning. In fact, we have already gone back on our pledges to the French. To prove this, I cite without comment his account of the existing strength of the British Army of the Rhine and the stages by which it was reduced to its parlous plight.

" Berlin Independent Brigade—3 Infantry battalions.

British Army of the Rhine—17 Infantry battalions, 14 Armoured units, plus nuclear and conventional Artillery (organized as seven Brigade groups).

We originally undertook to commit four Divisions to the British Army of the Rhine as our contribution to the N.A.T.O. force. This number was reduced first to 77,000, then to 64,000, then to 55,000, then to 45,000. This last reduction caused so many protests from other N.A.T.O. countries that the Government changed their mind and committed themselves to maintain a garrison of 55,000 men organized as seven Brigade groups. At the moment, although we are paying lip service to this number, very many of the units are below establishment."

[2] Since I delivered this lecture, Field-Marshal Montgomery, in an interview on *Panorama*, said: " I think that you won't get the size army we must have to handle our commitments all over the world; you won't get them unless you have at least 200,000 soldiers. You won't get that by voluntary means. The great mistake, to my mind, was to take National Service off the Statute Book. I would have left it there and just put it in suspended animation. Now, you see, if they want to bring it back, which I think they may have to—some form of National Service—they've got to have legislation. A great pity."

are disputed. But it will not be denied that the firm goal for 1952 established at that conference was 50 divisions. Why are there only some 20 or so divisions under S.A.C.E.U.R., many of them under-manned and under-equipped? Why, to make it worse, do we find, combined with this failure to provide the physical strength the alliance requires, an increasing moral disintegration? First we can summarily dismiss all the physical excuses for these failures. It is sometimes said that we cannot provide 50 divisions because we in Western Europe are outnumbered by the Russians. The actual figures belie this excuse. The population of Britain and Western Europe is larger than that of the Soviet Union, considerably better educated, and enriched with traditional skills. No, there is no numerical limitation which prevents us raising the manpower required.

I conclude, therefore, that the basic problem of N.A.T.O. today is a moral problem, a problem of will power. Unless the politicians tackle this moral problem, the soldiers can do nothing at all. An authoritarian nation can conscript its people and even maintain the fighting morale of its army, although the ordinary man in the street, when left to his own thoughts, feels morally uncommitted. But you cannot raise armies in a democracy unless you convince the people that what you are doing is sensible, just, and necessary. One of the things which most gladdened me about the election of President Kennedy is that he is a young man who recognizes the importance of will power and morale, who has stopped talking only in terms of statistics and weapon systems, and admits that what has been lacking with us during the 1950s is will power and a good conscience. And what saps that will power is the uncertainty of our aim. We all say we want to defend freedom. But if we dare to start discussing with each other exactly what we feel about freedom, the nations start quarrelling with each other, and within each nation we fall apart into warring groups.

I will mention only two of the uncertainties which have recently demoralized the Western alliance. The first is the assumption which often underlies the concept of interdependence. Many supporters of N.A.T.O. wish to transform it into an Atlantic confederation, thinking of it as a kind of modern Roman Empire, whose frontiers are conterminous with the limits of civilization. Here, within these frontiers they say, is contained the 'free world,' which we must defend against the modern barbarians who are threatening it from outside.

I can best comment on this concept of Western defence by means of an anecdote. In 1929 I went to Germany for a year and lived for some months in Frankfurt-am-Main. My host was a distinguished Jewish judge, who committed suicide when Hitler came to power because he was the kind of German Jew who could not bear to leave his own country. On Sundays we used to walk on the Taunus mountains. Along the great bare saddle at the top there still runs the line of the old Roman *limes*, a barrow and a ditch, with a magnificent view towards the Rhine valley. I remember standing there one Sunday morning, as the old man said to me, "Things haven't changed much since the Romans left. This side, my dear Dick, civilization. The other side, barbarism. It was true then. It is still true today." This German Jewish judge had a clear and precise notion of Western defence. The job was to defend the *limes* of civilization, the place where the West ends and slavery begins. It was the simplicity of their strategic concept which maintained Roman morale for so many hundreds of years. The Roman legionaries knew what they had to do and why they were doing it.

Would a similar concept give a similar morale to N.A.T.O.'s soldiers today? The belief that it would was, I think, at the core of what we may call the Dulles doctrine. John Foster Dulles saw the world in terms of a simple conflict between

good and evil, along a line that divided the ' free world ' from its enemies. Lack of success made the Dulles doctrine unpopular. Yet a number of people, here as well as in America, still profoundly believe in this basic assumption.

The trouble about this idea of a frontier of freedom is that it divides far more that it unites. Within the Western world there are many millions who do not believe either that all freedom and civilization is contained within the Atlantic alliance or that Communist Russia and China can be intelligently compared with the barbarian hordes outside the Roman *limes*. The concept which gave morale to the Roman armies divides and demoralizes those of N.A.T.O. In our modern circumstances, it is a defeatist doctrine, because the forces it condemns as barbarism are so patently capable of outpacing our rate of technological progress and adding superiority in science to their already overwhelming superiority in numbers.

At least for 200 years the Romans had the strength required to hold the *limes* against the barbarians, whereas we know that, if we define as barbarism everything outside N.A.T.O., then barbarism is bound to win. That is why, when I hear talk about the ' free world,' as contrasted with the Communist world, two doubts arise in my mind. First I ask myself whether all freedom is in fact contained within N.A.T.O.; and, secondly, I wonder whether, even if it were, it would be wise to declare permanent war on those outside.

Let us assume, however, for a moment that the concept is sound. If one accepts it, it seems to me clearly to follow that the only rational thing for the West to do is to integrate our nations into a single super-state. If we are to defend this small part of the world against a rapidly growing and rapidly developing Communist bloc, it is surely clear that we cannot afford the waste of divided sovereignty and the disastrous military and economic weakness that it brings. Theoretically, it is possible to conceive that an Atlantic Union, organized as a single confederation dominated by the United States, could survive for some generations at least. What is not conceivable is that an Atlantic community, divided into a number of independent nations, each producing its own weapons, each with its own strategy, can be militarily viable. If Rome had permitted 30 different Emperors, each with his own army, inside its frontiers, it would have disintegrated hundreds of years earlier. It was the strength of Rome to realize that, against the barbarians pressing on the *limes*, defence must be under highly centralized control.

This logic, however, is unacceptable not only to the White House and the Pentagon but to the other members of N.A.T.O., including ourselves. I have not met any prominent soldier or politician willing to accept the view that we are the Greeks in an American Empire and that we must become members of an Atlantic super-state in order to defend ourselves in the cold war.

Then what is the alternative ? I suggest that our strategy should be based on a very different concept. We should assume that the era during which the world was dominated first by the European Powers and, more recently, by the North Atlantic community, is drawing to a close. By the end of this century the balance of power will have shifted from the old, industrialized Western Powers to the new Powers grouped round Russia and China. On that assumption the major objective of our defence policy would be to ensure that this transition occurs without a world war which blows us all to pieces.

It is clear that such an outlook will lead us to develop quite a different kind of strategy. Instead of trying to contain a barbarian threat along a *limes* that runs right

across the world, it should be our object to break up the power *blocs* that have been formed since 1945 and to create buffer areas of independence or neutrality between the two super-Powers, and so gradually produce new terms of co-existence.

I realize that the assumptions which underlie this concept of Western defence policy will be profoundly distasteful to many. But I am sure you will agree with me on one thing at least. We cannot have a successful N.A.T.O. defence policy without deciding between these rival concepts and making up our minds what it is that we are basically trying to do. For, if we try to confuse both concepts and do two things simultaneously—to man the frontiers of freedom and to achieve terms of co-existence —then we are not likely to come off very well against some very formidable opponents.

A good illustration of the defeats we inflict on ourselves by this uncertainty of purpose is to be found in Germany. Suppose for a moment our strategy is based on the concept of the *limes* of civilization. In that case we should be wholly content with the present *status quo* and it should be regarded as fortunate that the frontier of civilization has been drawn so as to put most of the Prussians outside, whereas we have the South and West Germans inside the Atlantic community. On this assumption, indeed, it should be our policy deliberately to keep Germany divided and to integrate our Germans into the Atlantic confederation. At least that is a policy. It makes sense, militarily as well as politically. But it is not the policy of N.A.T.O. today. On the contrary, every N.A.T.O. Government is committed to the objective of German reunification and denounces as intolerable a partition which keeps 18 million Germans under Russian control. Our strategy, in fact, is based on two contradictory assumptions: (1) that we should keep Germany and Europe divided and be content to defend the frontier of civilization established in 1945; (2) that we should seek a reunification of Germany as part of the pacification of Europe and the reduction of tension that can only be achieved on the basis of peaceful co-existence with the Soviet Union.

No wonder N.A.T.O. is in trouble. For the soldier requires from the politician a clear directive. He must be told what the mission of the N.A.T.O. armies is. And if the politicians do not know the answer or give contradictory answers, it is not surprising that morale is undermined.

The second uncertainty in N.A.T.O. policy that I want to discuss relates to the use of nuclear weapons, both strategic and tactical. Nothing has demoralized the Western world more than the ambiguity of the attitude adopted by our Governments to these new weapon systems. It is as though our politicians and our soldiers had both refused to think clearly, for fear of facing the facts.

What is it that has prompted this prolonged exhibition of intellectual cowardice? In studying this problem, we should first observe that our uncertainties and ambiguities do not seem to occur in the Communist States. The Russians have had no difficulty in assimilating nuclear strategy into their military system—nor have the Chinese! When I was in Peking a few years ago, I did not meet a single Chinese Communist who felt the faintest moral compunction at the prospect that his country might some day rely on nuclear threats. On the contrary, they were all looking forward to it with eager anticipation. Why is it that the Communists have avoided the agonizing moral reappraisals which have racked the Western world?

Some people will say that it is because they are uncivilized or because Marxism is fundamentally immoral. I do not agree. The explanation, I think, must be found in the fact that the Communists do not welcome nuclear weapons as an epoch-making

innovation, which renders all previous weapons and strategies obsolete. They see them merely as another phase in the development of warfare and try quite coolly to assess their objective utility as a means of imposing one's will on the enemy.

Looked at from this point of view, nuclear weapons, at least in their present stage of development, have grave disadvantages. Like gas, they work both ways and that is one reason why, to the Russians, they are not particularly attractive. Of course, if the potential enemy has them, they must have them too. But we have plenty of evidence that the Russians did not rush into the nuclear arms race with any great enthusiasm or expectations. They followed us into it because they could not afford to permit a Western monopoly in this respect.

What a contrast with the attitude of the Western democracies! In our countries the nuclear weapon was welcomed because it seemed to provide a method of containing Communism without the trouble either of waging conventional war or raising and equipping large fighting armies. This conviction that the nuclear bomb could provide a substitute for the fighting soldier was already in evidence as early as 1945. There is now little doubt about the motives that prompted the American administration to sanction the use of the atom bomb at Hiroshima and Nagasaki. One reason why the President was urged to drop the bomb was undoubtedly the desire of those responsible for its production for testing its efficacy and revealing its role in power politics before peace broke out and made the test impossible. But Mr. Truman's main concern was to shorten the war and save casualties. It is absurd to attribute to the President Machiavellian calculations about keeping Russia out. In sober fact, although Japan was broken and desperately seeking to negotiate an armistice via the Russians, Mr. Truman was still trying to make Stalin honour his promise to come into the war against Japan. What moved him and his closest advisers was the thought that the war could be ended by a nice clean act of annihilation, in which hundreds of thousands of American lives could be saved at the cost of a few thousand remote and unknown Japanese civilians.

Anyone who is shocked at a leader of a Western democracy thinking in this way should remember that Hiroshima and Nagasaki were not the first acts of this kind. The nuclear weapon—the final instrument of annihilation—was only the logical fulfilment of the strategy of area bombing evolved by our own Bomber Command and employed by the Americans in their fire-bomb raids against Japanese cities. Already in the 1930s the possibility of substituting aerial annihilation of the enemy home front for old-fashioned warfare in the field had been discussed in a number of theoretical strategic treatises. It is interesting to note that this concept of annihilation by remote control was not the brain-child either of Hitler's Germany or of Stalin's Russia. It was evolved after the first World War by the theorists of air warfare in Paris, Washington, and London, and it was accepted uncritically by the politicians because we Westerners detest war and are always searching for a substitute for it.

What evidence was there to suggest that, with bombs of the strength then available, an enemy home front could be broken from the air? Careful German experimentation during the Spanish war had shown that Republican morale was actually stiffened by aerial bombing. Later this was confirmed during the second World War. During 1941 and 1942, one of my jobs as Director of Psychological Warfare against Germany was to study German home morale and, in particular, to assess the effects, both on war production and on the spirit of the German people, of our bomber raids. I remember my Department put forward paper after paper indicating that there was no evidence that Germany would surrender even if she were

subjected to a far higher level of bombing than that which Britain had suffered. Indeed, all our evidence about the moral effect of the blitz on Britain suggested that, so far from breaking morale, it actually strengthened it. Unless the effectiveness of the bombing, therefore, was raised far beyond even the biggest claims of Bomber Command, we predicted that its effect would be to stiffen German resistance. Our expert predictions had no effect on the War Cabinet. Among its members, particularly Sir Winston and Lord Attlee, there was a will to believe that a substitute for Passchendaele and the Somme must be found, and our soldiers and sailors spared the casualty rates of the first World War. If that could be achieved only by annihilating the German home front, well, the Germans had brought their fate on themselves.

As Sir Charles Snow pointed out in his recent *Science and Government*, the priority given to bombing was not justified in terms of the destruction caused; indeed, it probably delayed the invasion of Europe for a year. Yet the same prejudices were revealed and the same mistakes made when we were confronted with the issues of nuclear warfare after 1945. But now there was added to those prejudices a new and even more dangerously arrogant assumption of technological superiority. Even if the Russians tried to compete, it was assumed that we should always remain well ahead in this particular arms race and never be called on to make good the threat of annihilation on which our new nuclear strategy was based. With these new weapons, in fact, we could do what the Romans were never able to do—defeat the barbarians without fighting them. The Roman Empire failed when the manpower for the legions failed. It was no good maintaining the Roman Wall unless there were sufficient men to garrison it. Armed with nuclear weapons, our leaders had the wonderful feeling that they could keep the peace and preserve Western freedom without the burden of using mass armies.

Not unnaturally, this nuclear strategy was particularly popular among the politicians, who realized the unpopularity in a democracy of maintaining large armed forces in peacetime. For the soldiers, too, the strategy had its temptations. One reason at least which prompted our Service Chiefs to accept the Sandys defence policy in 1957 was the unpopularity of National Service in the affluent society and the difficulty of turning the citizen of a modern democracy into a fighting soldier. In Korea, it became only too clear that most Western soldiers are unwilling to fight on level terms with a Communist enemy. Indeed, one of the moral problems of Western defence is our reluctance to be killed, compared with the stoic fatalism of a Chinese or a Russian soldier. That is why no Western army can sustain a casualty rate such as the Russians sustained in the second World War and the Chinese in Korea. Western soldiers expect their commanders to provide them with overwhelming superiority in both long-range and short-range weapons of annihilation. Where this superiority is denied them and they have to fight on level terms, their morale becomes questionable. I am putting this problem to you in its bluntest form because, unless we face it honestly, we shall never appreciate how we came to accept our nuclear strategy. The truth is that the nuclear weapon was developed in the West as a substitute for the fighting soldier, and nuclear annihilation came to be regarded as a means of avoiding the long, evenly matched slaughter of battles of position.

In the critical years when this nuclear strategy was adopted, a number of voices were raised against it. In Washington, for example, as we know from the transcript of the Oppenheimer hearings, George Kennan, then head of policy planning at the State Department, and a number of leading scientists foresaw clearly what has actually happened and warned the President against it. Mr. Kennan, in particular,

was able to predict with uncanny accuracy the effect of reliance on the H-bomb on Western morale and Western diplomatic strength. The result has been a crisis of conscience, combined with a growing impotence. A false assumption of the West's nuclear strength has been used to justify a failure either to raise the necessary manpower or to provide that manpower with adequate equipment. As a result, our leaders have had to tell S.A.C.E.U.R. that his armies must rely, from the very first stage of a war, on nuclear tactical weapons. This nuclear strategy was adopted and our conventional forces were permitted to run down some years before the atomic tactical weapons existed. Now that they are beginning to come into production, S.A.C.E.U.R. has been compelled to dispose them at battalion level by the fact that he does not have sufficient conventional strength to hold positions on level terms against Russia's fighting strength. This reliance on the nuclear armoury as an *ersatz* for fire power saps morale and makes it very difficult to train a fighting soldier. After all, our men know perfectly well that the Russians also possess nuclear tactical weapons, which cancel out any advantage ours may give us. They also know that, once ours are employed, the chances of the Russians failing to blot out the bases in N.A.T.O. countries are small indeed. So the strategy of N.A.T.O. becomes a threat by the N.A.T.O. countries to commit national suicide if the Red Army moves in Europe. That is hardly an encouragement to fighting morale. If you tell a soldier that his job is to stand on guard while the button is pressed and his home is destroyed, he is not likely to exude self-confidence.

We could say something very different. " We know that the Russians have more men and better equipment," we could tell him, " and we are determined to remedy this as soon as possible. But meanwhile, if trouble comes, it will be your duty to put up the best resistance you can with conventional weapons alone. If you fight to the death, the crisis may be averted. If you fail, nuclear weapons are bound to be employed and your homeland will be destroyed." A strategy of this kind would, I believe, restore to the soldier his fighting spirit, because it would give him a cause and restore his importance to his country.

I believe the single most important decision N.A.T.O. has to take is to issue an instruction that its armies in Europe will in future be trained on the assumption that they have to rely exclusively on conventional weapons. Of course this will involve a complete reversal of M.C. 70 and of all the training that has been done under it. Nevertheless, I am convinced that this reversal will have to take place; and the nuclear weapons now disposed in forward positions will have to be withdrawn and put under a separate command. But in doing this we shall only be putting ourselves on a level with the Russians. Their troops in Europe are conventionally equipped and their nuclear weapons are organized in a separate command. The Red Army, in fact, is still trained as a conventional army and that is why it is still an *élite* force, with a high fighting morale. It is my contention that, once N.A.T.O. troops were trained in the same way, their morale would be restored, along with their self-respect, by the return to the belief in the soldier as the keeper of the peace.

What if we do not take this step ? What if we continue to rely on the threat of nuclear bombardment as a substitute for fighting soldiers ? The result will not be world war but unconditional surrender, or at least a surrender more humiliating than Munich. For, if ever the crisis came in Europe, I am convinced that the order would not be given to use nuclear weapons. And, since our troops will not have been trained to defend themselves without recourse to such weapons, surrender will be bound to take place. Nuclear strategy, in fact, has faced us with the alternative between

accepting a greater Munich or committing suicide. Until we realize this fact, there will be no way of stopping N.A.T.O.'s decline.

I conclude with this thought. The blame for all this does not lie with the soldiers but with the politicians and so-called leaders of public opinion. N.A.T.O.'s morale is being destroyed by two factors: (1) an arrogant assumption that the Westerner, as the defender of civilization, must always be able to rely on superior equipment in the field and superior economic strength and scientific skill at home; and (2) a morality, or lack of morality, that justifies the democracies in relying on weapons of annihilation as a substitute for the will to sacrifice for the cause of peace. It is the combination of this intellectual fallacy with this moral decadence that has blinded us in the last decade and a half, so that we have permitted ourselves to become almost completely impotent to defend ourselves. The beginning of wisdom for N.A.T.O. is the recognition that, whether in peaceful competition or in cold or in hot war, the West must now compete on level terms with the Communists or go under.

DISCUSSION

MR. ANTHONY VERRIER: Mr. Crossman spoke about morality. I should like to refer briefly to its cousin morale. In Rhine Army today there is a curious mixture of good morale and scepticism found among the private soldier rather than at the higher levels. Soldiers today are more articulate than their predecessors, whether conscript or Regular. Even though nuclear weapons have been added and commanders are now confident that Rhine Army has some credibility, troops remain in the same condition of uncertainty and ignorance.

The lecturer said that the main objective of Britain in this decade must be to use her power and influence to encourage the new nations to exercise their authority wisely. If this is to be accomplished, as I believe that it can be, would the lecturer not agree that Britain must retain certain kinds of military credibility? This means new strategies. How does he see these strategies being evolved?

THE LECTURER: I am glad that the question has been raised. It emphasizes the dilemma which I put. I should have said that, so far from throwing up the Commonwealth, now is the time when the Commonwealth, the greatest inter-racial world organization, is achieving its greatest importance. Any sane British strategy would be designed to preserve it.

Yet we have evolved a nuclear strategy which has virtually no relevance to the Commonwealth, because nuclear forces cannot be used to defend our Commonwealth interests. As a result of giving first priority to these nuclear weapons, we are faced with the choice of either cutting our Commonwealth commitments or introducing conscription once again.

BRIGADIER M. R. J. HOPE-THOMSON: Does the lecturer feel that his two aims of being able to rely primarily on conventional defence in Europe and also of being able to meet our commitments in those parts of the world not covered by the N.A.T.O. alliance can be achieved merely by a reorganization of existing resources? I use the term resources in the full three-Service sense. Are we not forced to take the view that voluntary service will not enable us to meet our commitments outside N.A.T.O. and also achieve the aim of relying primarily on conventional weapons in Europe and only secondarily and in the last resort on nuclear weapons? How can we do that without, in fact, reversing our policy on voluntary service?

THE LECTURER: I have no answer of any kind to that question.

MRS. E. BENTLEY BEAUMAN: The lecturer spoke a good deal about psychology and also about moral influences. Early on he said that " in the next war, we shall " do this and that. I know that this is the usual way of talking and writing, but as a civil defence

worker I should like to ask whether he would be prepared to start a campaign to change this to " if there is a next war, we would do this and that." If he would use his influence in that way, it might start a fashion which would have world-wide repercussions.

THE LECTURER: No, I am not prepared to introduce that fashion. But then we may differ about teaching methods. My main aim is to teach people about the real dangers in which they live and that there is no way of getting out of those dangers without facing them frankly. " Should," " would," " may " and " possible " are words which we use to avoid facing this real choice. I use " shall " and " will," because I actually want people to shiver at what I say and begin to realize that the worst *must* happen unless they do something about it.

I agree that, after my " will," there should always be an " unless " about the next war. But I want to use the word " will " for this reason: there will be another war if nuclear weapons continue to spread at the pace at which they are spreading. It is no good saying " should " and " would." It must be " shall, unless we do A, B, C, and D." Then people may take me seriously.

LIEUT.-COMMANDER P. R. D. KIMM: The lecturer has commented on the moral effect on troops contemplating the possibilities of tactical nuclear war and its aftermath. There is surely, though, an indisputable deterrent effect in a tactical as well as a strategic nuclear weapon. Would the lecturer then give his views on the relative deterrent effectiveness of a ' brush-fire fire-brigade ' equipped with a combination of nuclear and conventional ' hoses,' and one with conventional appliances only ?

THE LECTURER: I want to make a parallel. I suppose that the most difficult moral problem before nuclear weapons was German rearmament, whether we should rearm the West Germans. I held the view at that time that, if agreement over Germany was impossible, there had to be some kind of arming of our Germans. But I also held the view that, since it was always dangerous to arm Germans, the level of rearmament should be as low as possible. Indeed, a good simple rule which we might well have followed would have been to arm our West Germans only to the degree to which the Russians were arming their East Germans.

Now let me apply this rule to nuclear weapons. I hold that it is essential to arm the West with these weapons to the same degree as the Russians. We should have whatever the Russians have, not more, not less. I am told that, whereas N.A.T.O. has atomic weapons right down in the front line, the Russians do not. They have them in a special atomic tactical pool under special commanders, back from the front. I would be much happier if we decided merely to balance their nuclear strength on the same strategic assumptions as they do.

COMMANDER H. MULLENEUX: The lecturer has mentioned the question of disengagement. Would it be practicable to maintain even if we were to succeed in bringing it about, the result being that the Americans would go home across the Atlantic, whereas the Russians would have only a short way to march back ?

THE LECTURER: This raises the question what kind of dangers we face. My own view is that there never has been a major danger of Russia, of her own, as an act of expansion, putting the Red Army into Western Europe. I have studied this as far as I could, and in the history of Communism I have not seen that they have used military occupation of that kind in many countries as an act of expansion. They have expanded without the use of military power. Therefore, if the Russians could expand by other means, they will not use military means.

Hungary proves what I have said. It was part of the Russian sphere, allocated in 1945, and in 1956 the Hungarians tried to alter the military balance of power by joining the West or becoming neutral. I wish they could have succeeded, but the Russians refused to let the military balance of power be altered by the Hungarian revolution.

I do not see much evidence that the Russians seek to alter that balance of power by forcible occupation of areas agreed previously to belong to the West. Korea? There seems to be a lot of evidence that the Russians decided to move into South Korea only after both General MacArthur and Mr. Acheson had publicly stated that America did not consider South Korea a vital American interest. Only after that did they mop up what they misleadingly thought the Americans had left.

I happen to think that the main Russian weapons of expansion are not military. Therefore, in my view, a relatively small standing force is required in Western Europe to deter military aggression. But it must be backed by a posture of defence. This is my main point: backed by nuclear weapons it is valueless, because they may call the bluff. I do not think that piling nuclear weapons into Western Europe is the best way of creating a posture of fighting. On the contrary, it is a posture of cynicism and of feeling " there is nothing I can do about it."

The morale of Western Europe would be improved if we took every nuclear weapon as far back as we could and if we made it clear that we would look after ourselves and defend ourselves with the kind of weapons which are weapons of defence. The Russians would be far more deterred by a small trained army plus plans for conscription and mobilization, which would indicate a readiness of the people to defend themselves, than by a vast retinue of nuclear weapons.

AIR VICE-MARSHAL T. C. TRAILL: The lecturer implied that what we lack in the West is a noble purpose and that what they have on the other side is a very clear aim. How would he propose that we should go about selecting and finding our aim?

THE LECTURER: How would I define the aim? What I suggested was that we lacked clarity of purpose. We have confused purposes, which often contradict each other. It is easier to be a Communist than to be a democrat. It is easier to run an authoritarian political party, as I well know, than a democratic political party. Some of the greatest difficulties in the Labour Party are because we are so democratic.

The problem of leadership in a democracy is far more acute than in a totalitarian State. The Russians can define their aim centrally from on top and everybody accepts, whereas each aim of ours must be argued out from below. If it is pushed upon people from the top, they will not take it.

This is where Field-Marshal Montgomery sometimes talks extremely good sense. The problem of morale is the problem of participation by the people, sensing the aim and sharing in it. This is the basic question of the West. Can the West feel that it shares as a mass in the civilization which, until quite recently, was the privilege of a minority? Technically, we have provided this civilization to everybody, but although technically, in terms of physical resources, everybody has all this wealth, they do not share the spiritual part.

I remember vividly a long discussion with an East German Communist. We were discussing why so many East Germans flitted to West Germany and this Communist leader said to me, " We know quite well why they go. Not only because the standard of living is better there but because work stops at five o'clock. In West Germany one is allowed to be selfish and non-political. In East Germany we insist that our citizens are virtuous the whole time and that they volunteer for political services after work stops." That is the disadvantage of the Communist system. But we should notice that we here in the West pay a price for allowing what the Greeks called the *idiotes*, the person who remains ' private ' and takes no part. If the whole population exert their right not to participate, a State collapses. It has been seen in France. The non-participation in democracy led to de Gaulle. When there is a vacuum, authority takes over because there is no government. The problem of the West is to see how to get a real participation of the masses voluntarily, without the enormous advantage of the Communists' central compulsory means of communication.

Here we need some very new thinking. I am very much worried at the thought on Sunday mornings, when I get the morning papers and I read the nation's Sunday education—the *News of the World*, *Sunday Express*, *Sunday Dispatch*, and *Sunday Pictorial*. In Russia, on a Sunday, the people are being educated differently. You may say that it is totalitarian, but it is better than the kind of exploitation of commercial sex which is the main Sunday education in this country today. Can we really afford to surrender control of the main educational influences in this country to people who have not the slightest interest in education, whose sole aim is to make money out of human weakness? *Pravda* and *Izvestia*, of course, are very boring, compared with our Sunday papers. But I suspect that those who read them turn out to be better soldiers.

PROFESSOR BLACKETT: I should like to raise a point about the morale of the German soldier. Recently, there was an exercise in Schleswig Holstein in which 50 tactical atomic bombs were dropped. The assessors decided that 400,000 people were killed. A well-known and wise German said, " I do not think the German Army would fight any more after that." This must be taken into account. It is extremely likely that as the German Army gets stronger, more important, and more dominating in Europe, they will simply insist that the present strategy of putting atomic weapons down to battalion level is stopped.

Therefore, I think very strongly with the lecturer that the most important single step that the West can take in the near future would be to take these tactical atomic weapons out of the lower echelons and put them effectively under the same control as the great deterrent.

THE LECTURER: I am glad that Professor Blackett made that interjection about Germany. Some people imagine that the Germans are militarists who like committing suicide. That is not my impression. Nowhere in Germany is far from the partition line. In my only interview with Herr Strauss, the German Minister of Defence, he said, " You asked me whether I want these atomic tactical weapons in our hands. If the order has to be given to fire them at Leipzig or Dresden, do you think that I would prefer to give the order rather than those damned Americans? If you ask me, I do not want to give the order anyway. I want, however, to have the power to stop it being given." That was a very sensible remark. The strongest advocate of sanity should be a German general. Unfortunately, however, Herr Strauss and his generals seem to have been losing their good sense recently.

CAPTAIN CARLETON-SMITH: The lecturer suggested that the nuclear defence policy has not achieved its aim. How does he account for the fact that we have had peace in the world for the last 16 years?

He spoke about the morale of the British soldier being low. I am a British soldier, but my morale is not low. The lecturer said that it would be higher if we took away nuclear weapons. I suggest that the morale of the British soldier in Germany, where N.A.T.O. has 35 divisions against 200 divisions, would be markedly lower than it is today in the knowledge that we could not match the Russian totalitarian system by providing another 200 divisions ourselves.

Thirdly, I would make a point about our ability to fight a ' brush-fire ' war. The lecturer rather dismissed this factor. We have a strategic reserve in England capable of being flown in small numbers able to deal with emergencies abroad, and we have in Kenya a brigade, and three or four battalions of the King's African Rifles in East Africa. That is nearly as many troops as we employed in Kenya during the Mau Mau emergency at its height.

THE LECTURER: I am grateful to the questioner for putting the points so clearly. Regarding his second one about the British soldier, I was trying to say, as a civilian, that his morale would be improved if he saw clearly his functions in war.

I do not think it will be denied that starting a nuclear war in Europe would be likely to lead to the total destruction of this country. I cannot really believe that the morale of

the soldier in Europe would be lowered by feeling that he was in an Army whose actions did not instantaneously require the destruction of his home, which is our present situation.

The speaker then asked how I accounted for the fact that for 16 years we have maintained the peace. As a civilian, I hesitate to tell a soldier that the aim of British strategy is not simply to avoid war, but to strengthen and maintain our interests and defend the cause of freedom. In the last 16 years, Communism has advanced all over the world with enormous power. The power of the West has progressively declined.

Can he not recall the time, in 1945, when we regarded the Communists and the Russians as a minority movement on the defensive ? The way that we manage to forget the past means that we conceal from ourselves the appalling decline of our strength—I mean, of the full Western alliance—from 1945 until now. I am amazed to hear a soldier say that he thinks we should congratulate ourselves on having defended everything successfully between 1945 and now.

The last question concerned the strategic reserve. As an amateur, it is not my impression that the situation is quite as rosy as the speaker said. I was picturing the position after the last conscript has gone out of the Army. We are still relying on conscript soldiers. I was discussing what we would do with 160,000 men. We have about 218,000 this year. It is proposed to do the same job with 160,000. The question I was raising was whether you, as experts, all felt as confident as the questioner does that we can deal with any trouble in the world with 160,000 men. I do not believe that any responsible person will tell us that our strategic reserve is adequate for that purpose.

You may say that we have air mobility to move the Army about in small quantities. We did a little experiment the other year to Libya. Did that prove that you could get a division quickly to a point of crisis ? It proved exactly the opposite. The Americans, with all their wealth, can just move a division. We can move nothing approaching that. Therefore, do not let us deceive ourselves into saying that a substitute for men—this is the eternal moralist's search for a substitute—is mobility. Mobility is as much a will-o'-the-wisp as nuclear weapons.

Let us give up both as substitutes. They are important factors in war, but they are no substitute for men trained to fight with weapons they can actually use.

THE CHAIRMAN: Mr. Crossman started life as a university teacher and, as one myself, I know that a don wants above all to make his audience think. Only secondly does he want to make them agree with him. I think Mr. Crossman has triumphantly succeeded in the first aim, and I rather suspect that he has succeeded more considerably in the second aim than is often the case.

Nothing more remains for me to do than to thank Mr. Crossman for a stimulating and most inspiring afternoon. (*Applause.*)

OPERATIONAL RESEARCH AND NUCLEAR WEAPONS

By Professor P. M. S. Blackett, M.A., F.R.S.

On Wednesday, 22nd March, 1961, at 3 p.m.

Captain B. H. Liddell Hart in the Chair

The Chairman: Last year I resigned from every Committee and Council on which I sat in order to concentrate on history—and the only thing less to my taste than giving a lecture is presiding at one. But this was an invitation that I found hard to refuse, both because of early associations with the R.U.S.I. that have been revived under its present revivified direction, and because of my particularly high regard for today's speaker.

Twenty-three years ago, in 1938, I met Professor Blackett for the first time, by sitting on the same platform. On that occasion he took the chair for me. After that lecture I took the opportunity of talking with him about the value of developing operational research in the Services, a need that I had been urging since the first World War. Mr. Hore-Belisha, on becoming Secretary of State for War, had given a lead in taking up the idea, and announced the creation of such a new organ when introducing the new Army Estimates in March, 1938.

Unfortunately, the proposed establishment was whittled down from a directorate to a small section under the D.C.I.G.S., *and* was viewed very dubiously in military quarters. So it was refreshing to find, on meeting Blackett, that such an eminent scientist—who had started his career as a naval officer and was now a member of the Tizard Committee of Research on Air Defence—was thinking on the same lines and needed no convincing.

That was the more fortunate because the newly formed section in the War Office was dispersed to other duties in the September crisis after Munich. In the course of a fresh effort that autumn to get such a research organ revived and developed, I was in touch with Professor Bernal, Zuckerman, and Julian Huxley, who had jointly prepared and circulated a striking memorandum on " the possible uses of scientific research in relation to war preparations," and I urged it should be extended to *operational* problems.

On the higher levels of the Army, General Pile, the Commander-in-Chief A.A. Command, was quick to grasp the value of such operational research and became its most ardent promoter. He took an early lead in the enlistment of scientists to work on such problems.

In 1940 Blackett was appointed Scientific Adviser to A.A. Command, and from the team of scientists which he formed there were developed the Operational Research Sections for all the other spheres of the Army. In March, 1941, Blackett went to Coastal Command, R.A.F., and there initiated similar developments. In December that same year he was made Director of Operational Research in the Admiralty. So to him is due, above all, the credit for its utilization and development in each of the three Services.

There is no more penetrating mind in this or any other country being applied to defence problems, and that is why we can look forward with the keenest interest to his examination of current ideas on nuclear weapons and the vital questions arising from them.

LECTURE

I WANT to start by thanking the Chairman for the kind things he has said about the work I did during the war at the beginnings of operational research. My connection with this development arose from a number of accidents, one of which was, I think, that I was originally trained in the Navy. At any rate, what I have to say today is about certain developments in operational research—or operational analysis, as it is called in the United States—which seem to me and to many of my friends to have gone seriously wrong.

I want to begin by indicating what were some of the conditions that led to the successes—and we did have some successes—during the war. The organizational pattern was to have groups of operational research workers, mostly with a record of original scientific research, in very close contact with the Services' operational staffs, and so in daily contact with executive officers. These operational scientists sat in at staff meetings and learned the way that decisions were made. They then went away, studied any problems which arose, and occasionally were able to help markedly the staff to improve on their answers. The essential point was that the scientists were in very close contact with the people who took decisions, and they knew how those people thought and how they took those decisions.

It was found by experience that only in a fraction of the cases—perhaps 10 per cent. to 20 per cent.—could the scientists improve on the decisions arrived at by the trained military staff. In general, what may be called the conventional wisdom of the armed Services usually got somewhere near the best answer. But there were a number of cases, particularly those connected with the introduction of new weapons, where technical developments went so quickly and were so intricate that the scientists could add very considerably to what the trained staffs could compete with, burdened as they were by the stress of war.

Another consideration of extreme importance was that the operational research groups learned only to make concrete recommendations for action when they were themselves entirely convinced that, had they been in a position of executive authority, they would have acted so. This assumption of personal responsibility for one's recommendations is extremely important. Without it one could easily drop into academic frivolity: "Here is an ingenious idea for a military operation. Let us suggest that the staff act on it; someone else will check up to see if it is sound." This attitude is dangerous. To be useful rather than a nuisance, these operational research groups had to take moral responsibility for their recommendations; they had therefore to believe in them.

Since the invention of the first hydrogen bombs in the U.S.A. and the U.S.S.R. in 1953 and 1954, there has rightly been a great wave of analytic thinking about the basis of war, and this, growing slowly at first, has recently reached a terrific flood. There is now a vast literature of serious works, mainly from the U.S.A., amounting to perhaps 1,000,000 words a year. A great part of this is due to academics, either like myself, writing in their spare time, or in full-time posts in research institutes attached to universities or run by the armed Services. Much of this literature shows great knowledge and great intellectual ability. However, certain aspects alarm me greatly, and it is about these which I propose to talk.

One of the incidents in the past few years that led me to spend the time—and it has meant much time and a great deal of work—trying to master this academic military literature was a remark made by a great friend of mine, an American scientist of great distinction and wisdom. After a long discussion of some of the errors of this academic literature, he said: "Blackett, are you not ashamed of yourself for having developed operational analysis?"

An important part of this literature has recently taken the form of a sustained attack on the conclusions reached by conventional wisdom about 1956. I shall comment in particular on an article by Arnold Wohlstetter, of the Rand Corporation, published in *Foreign Affairs*, 1959. Other books are: *N.A.T.O. and American Security*, edited by Klaus Knorr, of Princeton University; *Strategy in the Missile*

Age, by Bernard Brodie, and *The Question of National Defence*, by Oscar Morgenstern, also of Princeton University. Then there is *On Thermonuclear War*, by Herman Kahn, also of the Rand.

These books have much in common. They all deal with the varying aspects of thermo-nuclear warfare. The result of the development of hydrogen bombs was to make most people—certainly myself—conclude that an attack by one thermo-nuclear Power on another would be suicidal. For we held that no country could ever expect to knock out every weapon of his opponent; if one thermo-nuclear weapon were left undestroyed, then the attacker might suffer 1,000,000 or more killed. So a large number of people concluded that thermo-nuclear weapons had made a deliberate, planned major war with nuclear weapons against a similarly armed enemy an insane policy.

Wohlstetter quotes the following people as having held the view that the situation was rather stable—Sir Winston Churchill, Air Marshal Slessor, Admiral Buzzard, Raymond Aron, General Gallois, Henry Kissinger, George Kennan, Dean Acheson, and myself. He quotes these people as having thought that the situation was rather stable because of the near impossibility of one country knocking out all the missiles or aircraft of another. He attacks this thesis very frankly, and substitutes the thesis that stability was then in 1959 very precarious, much more so than in 1956, and that unless very drastic steps were taken, would become still more precarious in the next few years. In this he definitely sets out to refute the view that aggression would be irrational or even insane, and explicitly argues to reverse this view. He substitutes for it the thesis that there are quite plausible circumstances when aggression would be both sane and rational. He vigorously attacks the notion that the existence of two such thermo-nuclear Powers as the U.S.A. and the U.S.S.R. leads to a balance which is rather stable against rational action. The title of the article is " The Delicacy of the Balance of Terror," and a key argument is the enormous advantage possessed by the aggressor in nuclear war.

Before I look at this essential point, it is necessary to point out that there is no experience of all-out nuclear war—we would probably not be here if there had been—so one cannot argue directly from past experience. We have to make some sort of model. All the arguments about possible nuclear war rest on some sort of model: " Let us suppose that two sides, A and B, with such-and-such weapons, fight each other." The danger of such necessary model-making is that it is very difficult to know whether the model is like enough a real possible situation. However, one must have some sort of model if any useful quantitative conclusions are to be drawn. In order to analyse these writers' views I must, unfortunately, use their own jargon, so I apologize in advance for the nauseating inhumanity of much that I shall be compelled to say.

Let us suppose that two countries, A and B, have power to destroy, by an all-out attack on cities and nuclear sites, 100 million of each other's inhabitants. Let us suppose that A is the aggressor and sets out not to attack the enemy cities but to try to destroy the retaliatory forces of his victim.

Any military man would think it a very successful operation if he brought off 90 per cent. of what he hoped to achieve. Let us suppose that he knocks out 90 per cent. of the enemy's retaliatory capacity. The enemy then retaliates with 10 per cent. against the aggressor's cities and so will kill 10 million of the aggressor's people. If, on the other hand, surprise is not complete—and I will come back to how it might not be—and the victim gets wind of it, in this schematic model he

will make a pre-emptive strike or forestalling blow on both the cities and the nuclear sites of the aggressor country. On our simple model the proposed aggressor will suffer 100 million killed. So the possibilities before a potential aggressor in a world of two equal nuclear Powers are as follows: to make no attack and so have no casualties—not then, at any rate; or to make a technically successful attack and suffer ten megadeaths; or to make an unsuccessful attack and have 100 megadeaths. Does this look like an overwhelming advantage to the aggressor country? Would sane statesmen take such a risk?

Let us now suppose that the victim country is only one-fifth as strong as in the above example. Then, if the aggressor makes his strike successfully, the victim will only be able to strike back with one-fifth of the strength assessed above, and so will cause only two megadeaths. However, if the aggressor loses the element of surprise, the victim's retaliation will cause 20 megadeaths. So the three options are: no deaths, two megadeaths, or 20 megadeaths. So even with a five to one superiority, it is hard to discern the alleged enormous advantage to the aggressor.

I have, of course, made the situation far too favourable to the aggressor. I have assumed that he can calculate beforehand that he would succeed in leaving only 10 per cent. of the victim's retaliatory capacity. But he could not do anything of the sort. All that his operational analysts could tell him is something like this. "We have programmed the problem for our electronic computers, and get the answer 10 per cent.; but of course it might be 20 per cent., or even 30 per cent."

Then again, think of the information one would need to achieve a 90 per cent. success. One would have to know the location of every missile site and the location of every aircraft, including nuclear-armed fighter-bombers. If the aircraft were airborne they would be immune. One must remember that 100 fighter-bombers, with ordinary A-bombs, could cause several megadeaths if they reached their targets, perhaps by hedge-hopping. One would have to know the location of every aircraft carrier. A fantastic amount of hour-by-hour information would be required for a successful attack of this kind.

Mr. Wohlstetter expresses a truism when he says that the U.S.S.R. can preserve secrecy about the movements and disposition of their forces very much better than can a Western democracy. That is true, but can they do it well enough? Is there no possibility that some Western agent may have penetrated their high councils, as the Russians themselves did very successfully for many years in Japan? The fascinating story of Richard Sorge should be warning enough.[1] Is it conceivable that a country planning such an aggression, which might well lead to several million of its own population being killed, would take no steps at all to alert the population, evacuate cities, etc.? If they did take such steps, would the diplomatic corps notice nothing? Among the half million or so tourists who go to the U.S.S.R. every year, might there not be some foreign agents who would report by radio any such civilian preparations?

Since the aggressor would have to be very certain of the up-to-date reliability of the information about his intended victim's military position, the location and movement of all aircraft and the state of missile bases would have to be reported hour by hour by radar by the aggressor's agents. So a nuclear aggression would have to be preceded by a great flood of radar reports, which would be monitored

[1] *Sorge, Soviet Master Spy*, by C. A. Willoughby (Kempe, 1952); *The Man with Three Faces*, by H. O. Merison.

by the intended victim and so would put him on the alert. Moreover, there is always the chance that the aggressor's agents may have been picked up by the victim's counter-espionage, but the channel kept open as a means of planting false information. Variations of the double agent story are common enough in history.[2] Even the doubt by an aggressor that his espionage system was certainly reliable would inhibit any sane government from initiating such a nuclear aggression as has been discussed here.

However we do the arithmetic, whatever variants of the model we make, we have to come to the conclusion that a nuclear aggression against a comparable Power would be so reckless as to be classed as insane.

I shall now make some remarks on Wohlstetter's views about the effect of the Russians' history on their psychology. Wohlstetter says: "Russian casualties in World War II were more than 20 million. Yet Russia recovered extremely well from this catastrophe. There are several quite plausible circumstances in the future when the Russians might be quite confident of being able to limit damage to considerably less than this number—they make sensible choices and we do not. On the other hand, the risks of not striking might at some juncture appear very great to the Soviets, involving, for example, disastrous defeat in a peripheral war; loss of key satellites with danger of revolt spreading possibly to Russia itself; or fear of attack by ourselves. Then, striking first, by surprise, would be a sensible choice for them, and from their point of view the smaller risk."

My first comment is that if the U.S.S.R. were involved in a global disastrous situation like that depicted, the West would be completely alerted, most aircraft would be airborne, geographical security clamped down, Soviet agents picked up, so the conditions for surprise would be completely excluded. Surprise attacks must really surprise, and so must come at a time of relaxation of tension, not when it is at its height.

Even if an apparently successful aggression were achieved, so that no retaliatory blow was launched immediately, there would be no certainty that it might not come, weeks, months, or years later. For nuclear warheads and missiles can be hidden, for instance in deep mines; there would be plenty of revengeful fanatics who would dedicate their lives to conveying them eventually to the aggressor's cities.

My second comment is that Wohlstetter's view that because a country has suffered 20 million killed in one war it would lightly accept the risk of losing 20 million in another seems to be contradictory to all common sense and to all Russian history. Russia's history has seen many major invasions but few major military aggressions. So I am quite sure that I do not believe in this statement of Wohlstetter's. It would be much truer to say that any country that has experienced the horror of losing 20 million in one war is very *unlikely* to take the risk again.

It seems to me that Wohlstetter has never thought deeply or imaginatively about the conditions in which he would find himself at a defence headquarters, facing the job of planning and executing what he would call a sensible operation. In the imaginary circumstances that he lists, in which he thinks the U.S.S.R. would be sensible to attack, there is only one in my view that has any semblance of reality: this is the fear that the U.S.A. might strike first.

[2] Within a few weeks of giving this lecture, the Blake case showed the dangerous unreliability of espionage systems.

This takes one to the key problem of how to reduce the mutual fear of forestalling blows driving one or other side into an aggression. This problem of the surprise attack is under active diplomatic discussion and is a vital one to tackle. But it seems to me an extremely bad beginning to such discussions as to how one can reduce the dangers of such surprise attack to exaggerate grossly its military feasibility. This is just what so many of these writers have done.

As regards the technical question of whether the U.S.S.R. has any overall nuclear superiority, the answer is almost certainly "No." As I have shown, even a five to one superiority still means that a very big risk has to be taken. All the published evidence shows that the U.S.S.R. has no overall nuclear superiority. The advent of the Russian missiles and their technological lead has reduced the overall American nuclear superiority, but not removed it. America had a nuclear monopoly till 1949, and an enormous superiority until recently. This overwhelming superiority has been very considerably reduced by the Russians' advance, but there is no evidence whatever to suppose that the Russians have a nuclear force of such a strength as to produce the military conditions for a successful first strike; nor is there any evidence that they are trying to do so.

Now we come to a curious point. Wohlstetter wrote his article two years ago, and held that the situation then, in 1958 or 1959, was very dangerous, and that it was more dangerous than in 1956, and was getting still more dangerous. Now Russian strength was much weaker, relative to its present strength, in 1956 than it is now, so how Mr. Wohlstetter could possibly have thought the situation then was extremely dangerous is hard to understand.

There seem to be only two alternatives. Either Mr. Wohlstetter had wrong information about the relative strengths of the nuclear power of the U.S.A. and U.S.S.R. or he must have feared that America might, in certain circumstances, initiate nuclear war. In 1958 there was no military possibility of the Russians bringing off a successful first strike; neither is there today as far as all the available evidence goes.

I want to come back to one of the most remarkable phrases in the quotation given above. When talking about possible Russian or American actions, Wohlstetter wrote; "they make sensible choices, and we do not."[3] In the context of the whole paragraph, this sentence can only be understood as implying that it would be a sensible policy for the U.S.S.R. to plan and, in certain circumstances, to carry out a nuclear aggression, even at a cost of up to 20 million Russian deaths. Whereas for America, such a policy, though apparently still sensible, in Wohlstetter's

[3] T. C. Schelling, of Harvard, has pointed out that the passage from Wohlstetter which I quoted was taken from the version of his article as reprinted in *Survival* and that the word "if" in the original was left out. The original sentence in the article in *Foreign Affairs* reads: "There are several quite plausible circumstances in the future when the Russians might be quite confident of being able to limit damage to considerably less than this number 20 [million casualties]—if they make sensible choices and we do not." Schelling states that in its correct form, the sentence does not imply any moral asymmetry. I do not think this is correct for the following reasons. Without the word "if," the sentence stated that, in certain plausible circumstances, Russia *would* plan and wage aggressive nuclear war but that America *would not*. With the "if," it implies that Russia *would probably* do so, but that America *would probably* not. So the moral asymmetry remains, softened perhaps from a certainty to a probability. In fact the

opinion, would not be carried out; presumably for moral reasons, or perhaps from failure to understand the argument of Wohlstetter that it was the sensible thing to do.

In any negotiations, and these are going on, and will go on—they are very important—about reducing the chance of surprise attack, it will be a very difficult case for the West to argue if they accept the view of Mr. Wohlstetter and his colleagues about the sanity of a first strike. They will have to prove to the U.S.S.R. that the moral objections to launching a first strike which have prevented America from doing so hitherto, can never conceivably weaken, and that there is no chance whatever of America taking what Mr. Wohlstetter holds would be a sensible action. This would be a ludicrous situation for our negotiators to be in. Mr. Wohlstetter's view would amount to asking the U.S.S.R. to base its military planning on the West's stated intention. It is one of the well-known theses of the analysts that one should plan on the enemy's capability, which one can know, and not on his intention, which one cannot. Wohlstetter's argument implies that the West must plan on Russian capability, but that the U.S.S.R. must plan on the West's intentions. This is not a useful basis for negotiation.

It is perfectly correct to bring into the analysis of these matters considerations of morality and common sense, but those broader considerations must be brought in consistently, and not just arbitrarily where it suits a particular argument. It is quite correct that a nation should pride itself on the superiority of its moral behaviour. Sometimes even they may be right. What is absurd is to expect one's opponents to plan their military policy on our own estimate of our own moral character.

The thesis that 1954–57 had an unwonted stability not likely to be repeated requires further analysis. Let us look at it. In 1954–57 America had an enormous superiority of nuclear weapons. Russia had a growing stockpile, but very much less. It was perfectly clear that this superiority could not last very long; it was only a matter of how long—five, 10, 15 years. So the prestige and power that went with the superiority would be bound to weaken. This was, of course, the classical situation of the military history books for the consideration of preventive war—the war you wage when you know that you are stronger than the enemy, knowing that if you wait you will lose that superiority. Preventive war was certainly discussed in the West, but not waged, for perfectly good practical as well as moral reasons. At Dien-Bien-Phu nuclear war was very near; at least a small-scale nuclear war. The deep shock to American opinion arising from the sputnik in 1957 could have provided another drive towards the view that this might be the last

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assumption of moral asymmetry is the key to Wohlstetter's whole argument. For if nuclear weapons gave as enormous an advantage to the aggressor as he holds, and in view of the undoubted overwhelming nuclear superiority of the U.S.A. in, say, about 1956, it can only have been moral restraint on the part of the U.S.A. which prevented them from being used. If the U.S.S.R. showed equal moral restraint, if and when she gets an overall nuclear superiority, then she would not attack. But Wohlstetter's whole theory is that he sees the main danger in that the U.S.S.R. would attack, even without overall nuclear superiority, relying on the alleged, but in my view, fictitious overwhelming advantage to the aggressor. What greater mental and moral asymmetry is there than to contrast the fact that the U.S.A. did not attack some years ago when she had an overwhelming nuclear advantage with the expectation that the U.S.S.R. would do so in the future, even without such superiority?

chance of eliminating Soviet Communism by force, but good sense and moral judgment held sway and the Americans did not behave like the amoral automata of military theorists. I have no doubt that the nuclear stalemate is more stable against deliberate actions of rational governments than it was a few years ago, and it is getting safer.

Wohlstetter reaches the exactly opposite conclusion; that it was then safe and is now unsafe, in spite of the general agreement that near equality of nuclear strength makes for stability. It is quite clear that the relative nuclear strength of Russia has been approaching equality with that of America, but has not yet reached it. Wohlstetter reaches the opposite conclusion, that of a decreasing stability, simply by means of a completely arbitrary assumption of moral asymmetry. He says, in effect, that 1957 was stable because America had huge nuclear superiority, but was moral; whereas in 1959, when the superiority was less, the balance is unstable because the Russians are wicked.

As already emphasized, it is extremely important to take into account the role of moral attitudes, and one of my criticisms of these analysts is that they often do not do so adequately. Against the assumption of moral superiority of the West, weight should be given to the very close integration, political and military, of Soviet theory and practice. This implies that they would work out very carefully the probable results of any major action. On the other hand, many of these academic military writers have been extremely influenced by the mathematical theory of games, which is essentially a mathematical theory of gambling. If a man from Mars studied the history of the last few decades, I am not quite sure which side he would think was less unlikely to risk everything on a nuclear gamble. Someone has pointed out that poker is the national game of America, and that chess is the national game of Russia.

It may be objected that I am giving too much attention to the practical consequences of the wide dissemination of these arguments for the delicacy of the balance of terror. Unfortunately, they undoubtedly have been very influential; they have proved extremely attractive to many academics and academically minded people, both in the United States and here. The arguments seem to have also influenced official government policies both here and in America.

The great danger, as I see it, is that if one accepts the delicacy of the balance of terror thesis—which I think is false—it can lead to an endless arms race with each side trying to be stronger in nuclear weapons than the other. Stability will never be achieved that way—if the balance is in fact delicate. Secondly, it diverts attention from the really important matters which are connected, not in my view with the possible sane actions of reasonable governments, but with nuclear war arising out of irresponsible or insane actions of governments or individuals; or through technological or human accident.

The exaggeration of the delicacy has another great danger. It gives a pretext for a country to think that it could, given enough technological effort, acquire—so the jargon goes—a first-counter-force strike capability, or, in plain English, that it could knock out at one blow all the nuclear retaliatory forces of the enemy so that it could utterly defeat the enemy without danger of damage to itself.

As far as official statements go, the American Administration has set itself firmly against re-acquiring such a first-strike capability—America had an effective first-strike capability in the early 1950s. For the U.S.S.R. did not then have a

nuclear retaliatory force; so that America could have damaged Russia very seriously without danger or damage to itself. Though the Administration seems firmly against a first-strike policy, recent Press reports suggest that there is a strong lobby working to re-acquire a first-strike-counter-force capability. In my view it would be disastrous if any such attempt were to be made.

Another great danger of the delicacy thesis relates to stopping the atomic bomb tests. If the balance is very delicate, as these people think, then a small change in weapon design might make a big strategic difference. Improved bombs, for instance, smaller, bigger, cleaner, or dirtier bombs might make an important difference and upset the military balance. If, however, the balance at present is extremely stable, for instance, as in our model where it is stable against differences of at least five to one in total nuclear strength, then small improvements in weapons make very little military difference. I believe it makes little difference in fact to the overall military situation whether nuclear bombs are *improved* by being made cleaner or dirtier, or larger or smaller.

The military objective for further testing is hard to understand. America has made 170 tests to the Russians' 60, so presumably has better bombs. There is strong pressure in certain circles in America to resume testing. Some of this drive is no doubt based on the delicacy of the strategic balance of terror thesis. I doubt whether anybody could justify, militarily, resuming tests purely to make better tactical atomic weapons, or for a very hypothetical anti-missile missile. Since the British Government has all along been one of the chief advocates of the banning of tests, we must be very wary of views that attempt to prove that there is great military value attaching to further tests by America or Russia.

If I myself believed that the balance of terror was as unstable as these writers think, I would, in all seriousness, believe that the safest option for Britain now, and ultimately for the world, would be to opt out of the nuclear arms race.

Actually, I think that the situation is rather stable against deliberate planned action by the present nuclear Powers. I am sure that, in fact, most people agree with this. But far the greatest danger of these theses of delicacy is the effect on arms control and disarmament negotiations. I have always held very strongly that if one wants to get anywhere in arms control and disarmament, one must have a sensible military theory. If one has invalid ideas about the use of nuclear weapons in operation, one cannot have a rational view on disarmament. This delicacy thesis has been used very widely, and is still being used, to argue that no negotiations for disarmament should occur, say, until the mid-'60s, when the West have hardened their bases. It is extremely important that people should make up their minds as to whether or not the balance against sane decisions is delicate.

What are the greatest dangers threatening the world due to the existence of nuclear weapons? One certainly is that the use of low yield nuclear weapons in minor struggles might start the process of escalation to all-out war with thermo-nuclear weapons used against cities. An urgent task before the Western allies is to reduce the dependence of their ground forces on nuclear weapons. It must never be forgotten that one N.A.T.O. pilot of a nuclear-armed fighter-bomber, ordered to attack some tactical target near the area of conflict, might through political fanaticism fly on to attack a major Russian city: immediate attack on at least some European cities would then be expected. So European cities might be destroyed due to the unauthorized action of a single individual.

Another serious danger is that considerable numbers of nuclear weapons might pass effectively out of the control of the three countries, U.S.A., U.S.S.R., and U.K., which now possess a massive stockpile, into the hands of other nations, or even rival groups within other nations. If so, one could envisage the possibility of reckless and irresponsible use, perhaps in some local struggle, which might spark off a wider conflagration. Few would dispute that a very serious situation would have arisen if nuclear weapons had been used by the U.S.A. in Korea or in Indo-China, or by Britain at Suez; or if nuclear weapons came into the possession of the contending factions in Algeria, Cuba, Laos, Vietnam, or in any other area in which similar struggles are likely. It must be remembered that military revolts and political upheavals, which are so common in the present epoch, may well bring the control of nuclear weapons into quite different hands to those to which they were originally entrusted. Desperate men, such as military rebels on the run after an unsuccessful revolt, could be reckless in the use of any nuclear weapons available.

Even the possibility of reckless individual actions by groups within a major State must be taken into account: each country will be more ready to fear this of other countries than of itself. However, President Eisenhower, in his remarkable valedictory address, courageously drew attention to these dangers. "In the councils of Government, we must guard against the acquisition of unwanted influence, whether sought or unsought, by the military-industrial complex. The potential for disastrous rise of misplaced power exists, and will persist." Many stories from Washington, particularly in the critical years from about 1953 to 1958, give credence to the existence of these fears.

On the plane of fiction, the thriller *Red Alert*,[4] with its impressive parade of S.A.C. technology and jargon, highlights the danger to the world of one man's mental instability. An unbalanced S.A.C. group commander launches on his own initiative a thermo-nuclear attack on Russian cities. Moreover, he ingeniously makes use of the elaborate coding methods to try to prevent its recall. Many experts are worried by the dangers inherent in highly complex, interlocked systems of communication and control. The very multiplication of safety devices may, in the event of malevolent action or just a technological breakdown, lead to disaster. For instance, a fuel explosion in an underground missile site might play havoc with a whole communication system, and in a time of tension when missiles were at the ready, could conceivably unintentionally lead to a missile being fired.

What is common to most of the above 'accidental' eventualities is that any nuclear attack which took place as a result would certainly not start by a deliberate and planned surprise attack on the enemy's retaliatory force, but would probably involve direct attacks on cities. So one can conclude that most 'accidental nuclear attacks' are likely to be against the enemy's cities. It is only 'deliberate planned nuclear attacks' which are likely to be against the enemy's nuclear bases.

Now it is clear that the measures required to guard against deliberate planned attack on one's bases may well increase the danger of accidental attacks on cities. For instance, the making of one's nuclear retaliatory force invulnerable, by diversification, dispersal, mobility, and protection, does nothing at all to protect one's cities against 'accidental' attack. Moreover, the technological complexity of such a hard retaliatory system may well increase the chance of communication failures leading to accidental war in times of tension. Moreover, a wide dispersal

[4] *Red Alert*. A novel of the first two hours of World War III, by Peter Bryant. (Ace Books Inc., New York, 1958.)

of weapons could well increase the chances of irresponsible action by individuals. The Polaris armed nuclear submarine has been widely acclaimed in the West as the ideal invulnerable deterrent: as a weapon pure and simple this may be so. But as part of a complex weapon system manned by fallible human beings, doubts begin to arise. In times of tension, there would be intense worry as to the reliability of communications with a fleet of submarines in the northern seas. How could one be certain that some submarine commander might not be a political fanatic or suffer from mental unbalance, perhaps induced by long periods submerged, perhaps being hunted by enemy craft? If and when a real measure of controlled arms limitation comes under serious discussion between the Russians and the West, it could be that the status of the Polaris submarine may prove a major headache.

When one comes to consider how, short of complete abolition of all nuclear weapons, the danger of accidental war can be minimized, the most important objectives are clearly to reduce the number of nuclear weapons deployed in the world, to reduce the number of individuals who can get their fingers on the nuclear trigger, and keep as small as possible the number of nations possessing nuclear weapons.

As we have seen, some of these objectives can conflict with the requirement to produce the hardest retaliatory force. So it is vital to estimate the relative danger to the world of deliberate planned nuclear attack on the bases, on the one hand, and accidental attack on cities on the other. I personally believe that the delicacy thesis of Wohlstetter and others has seriously exaggerated the danger of the *deliberate* attacks, compared with the various complex possibilities which we have collectively called *accidental* attack.

Clearly these considerations are vital to the formulation of any sensible plan for arms limitation. It seems likely that a not unimportant aspect of the conflict of views between the U.S.A. and the U.S.S.R. on the timing and details of the steps towards disarmament lies in different views of the relative danger of what we have called deliberate and accidental war. Without doubt, the emphasis in many Western circles on slow steps, keeping a high level of nuclear weapons till a later stage, is related to a belief that a deliberate Russian attack on American nuclear forces is the greatest danger; memories of Pearl Harbour are an important factor in this belief. On the other hand the Soviet emphasis on the desirability of going rapidly through the various stages towards a high degree of disarmament is likely to be related to fear of accidental war. Probably the U.S.S.R. consider that a deliberate American attack can adequately be deterred by a relatively few, but very invulnerable, missiles, and by their general prowess in the missile field. However, they probably have grave fears of the various types of unforeseeable action, which we have here collected under the word accidental. Compared to the relatively monolithic political structure of the Soviet bloc, excluding China, the U.S.S.R. may fear that the free World might not in all circumstances be able to stop the irresponsible use of nuclear power. They may even fear that the United States Government might conceivably be converted to the views of Wohlstetter and his colleagues on the overwhelming advantage of nuclear aggression.

To conclude, I want to express my own view that the least likely danger is a sane, deliberate, planned action by a responsible government. It seems to me much more likely that the greatest danger lies, not in the rational act of responsible statesmen, but from the essentially irrational acts of just mad people, or more likely, from the confused action of well-meaning people overwhelmed by the complex technological and human frailties. The more bombs in the world, the more fingers

on the trigger, the more nuclear weapons are mixed with conventional weapons, the greater the danger.

Whereas I am rather sure that the danger of deliberate nuclear attack by either side is very small and decreasing, I fear that the danger of some variety of accidental attack is already serious, and may become more so unless rapid progress is made with arms limitation and control.

DISCUSSION

SECOND-LIEUTENANT N. J. ROBERTS: Lord Attlee said recently that the more a country has to lose in the way of culture and advanced civilization the less likely it is to embark upon total war. Admitting that China, of all the major Powers, has the least to lose in that way, how do you see the effect on Soviet policy in the foreseeable future of China entering the nuclear arms race and thus becoming a potential total war initiator?

THE LECTURER: A very relevant point. I think that everyone agrees that it would be a great disaster if nuclear weapons go to many more countries. There are four already, and it is a major task to stop their spread. If the West does insist, as at one time it wanted to do, in spreading the weapons round the 15 N.A.T.O. countries, they will be found in other places too. The pressure from China on Russia to pass Russian bombs to China would be very great, and I do not think it could be resisted. There is every indication that the Russians do not want to help the Chinese get nuclear weapons and they are most unlikely to do so. If however we insist, as some plans suggest, on making them conventional in all parts of the world, it would be a disaster. One of the main objects of the test ban is to prevent people making their own, and that is very good, but it is much more important at present to prevent people giving bombs away.

To put it in proportion, the American stock of atomic bombs must be at least 100,000—maybe more—and one per cent. of this is vastly more than any or all of these smaller countries could make in years. The problem of spreading nuclear weapons is primarily at the present time a problem of whether the big Powers will decide not to give them away.

MR. HEDLEY BULL: Professor Blackett's address attacks two things; the doctrine that the balance of power is unstable, and academic strategic analysis, which has produced this doctrine. His attack on the former has some force, but his attack on the latter has not. For it is only by strategic analysis that the doctrine of an unstable balance can be shown to be false. What alternative is there to bad strategic analysis, other than good strategic analysis?

THE LECTURER: I quoted several names actually mentioned by Mr. Wohlstetter of people who did analysis and came to the conclusion that the balance was rather stable. This analysis I held to be good. The criticism I made of some recent analyses was directed to pointing out the mistakes, so making more probable that future analyses will be good.

MR. A. VERRIER: This kind of debate could only take place in the nuclear age. I would like to ask Professor Blackett whether he does not agree that one of the effects of the existence of nuclear weapons is to get this kind of false analysis which he describes, and that it inhibits effective thought about more mundane defence problems, with which many of us are concerned? Does he agree that it not only inhibits thought about limited war—brush-fire problems—but that it has had the effect of forcing people who are professionally concerned with these matters to rely on an apparent nuclear solution where, in fact, no nuclear solution exists?

I am suggesting that the 15 per cent. or so of total resources which, according to the Defence Budget, are allocated to nuclear offensive and defensive techniques in this country is no real reflection of the intellectual and emotional obsession with the nuclear solution to non-nuclear problems. The official disclaimer that we are not over-concerned with nuclear problems is, in fact, false.

THE LECTURER: I have no doubt that nuclear weapons do provide very difficult practical and theoretical problems, and have dominated military thinking adversely, and there is no dispute at all that the existence of nuclear weapons in the post-war period was a contributory reason for letting down conventional forces. We have suffered desperately in the West from a stupid over-reliance on nuclear weapons, and this is still going on today.

SIR CHARLES SNOW: I think that Professor Blackett is absolutely right in saying that for any sane people there would be a point at which we should not think of analytical thought. In the circumstances mentioned, I should give up thinking of military things and think of something more practical, such as assassination. There are real dangers in this particular kind of theory of games which seems to take hold so strongly of otherwise perfectly sensible people.

I remember going to a party in Berkeley last autumn where I met a most distinguished scientist who is devoted to the thesis that Professor Blackett is so rightly attacking. It is true that we had had a certain number of drinks, but the conversation passed over to the topic of how many casualties the United States could ' accept.' Everyone seems to agree in some mysterious way that they can ' accept ' 20 million or 30 million, but not 60 million. This lunatic conversation ran on. My friend was beginning to get seized with the problem of shelters—to reduce casualties, perhaps bringing them down from 60 million to 30 million. He said how much better everyone in the room would feel if instead of thinking there would be 60 million casualties, they knew there would be only 30 million. That was said in dead seriousness by one of the cleverest men alive. It makes one wonder.

To be fair to the Americans, I read in *Commentary* today an article which, though it had nothing like Professor Blackett's penetration, took the same view and attacked Kahn and the others in exactly the same way.

GROUP-CAPTAIN C. N. FOXLEY-NORRIS: Professor Blackett has described very convincingly a present situation which is not one of delicacy but of stability; that is to say, we have established a deterrent against nuclear or thermo-nuclear attack. To nobody can it really be described as either sane or attractive, but the idea of the deterrent, in the first place, was not only to prevent a nuclear attack but all forms of aggression. If all forms of nuclear attack or counter-attack are so unattractive, then conventional aggression becomes automatically more attractive, in that the deterrent against it is much less likely to be implemented. Does Professor Blackett agree, and should we not look more to our conventional arms?

THE LECTURER: I agree completely. It is almost universally agreed that the old policy of using a nuclear threat to deter land aggression is practically over. Nuclear weapons now only deter each other but little else. I think there is likely to be an increasing drive in the next few years to regain adequate conventional weapon capability.

I am told that in a recent exercise in Germany with 50 tactical bombs dropped in imagination, the umpires assessed that there were 400,000 killed as a result. A German expert commented: " I don't think the German Army would fight any more after that."

THE CHAIRMAN: Blackett's lecture has been as penetrating as one expected. It has most effectively punctured some of the over-inflated theorizing that is prevalent in many quarters and seems so plausible. ' Nuclear *warfare* ' is a contradiction in terms, for warfare is a matter of *organized* action, which is an impossibility in a state of such chaos as nuclear weapons would produce.

To bank on nullifying the other side's power of retaliation would be as foolish as staking one's life on picking out needles in a haystack. The best foundation for hope of preventing war in the nuclear age rests on the lack of any firm foundation for aggressive, or pre-emptive, planning. In other words, uncertainty is the best deterrent.

For that reason I was particularly interested in Blackett's argument for devoting greater efforts to ' systematic camouflage and decoy schemes.' There are great potentialities in what one might call ' defence by suggestion.' (*Applause.*)

DEFEAT IN THE EAST

By "SOIXANTE"

"We aim at peace not only in one country, but also throughout the world. In order to achieve this object we must wage a life and death war. The sacrifice may be great and the time long but there already lies clearly before us a new world of permanent peace and permanent light."—MAO TSE-TUNG.

"THE victors came in sand-shoes, trudging through the mud with ammunition slung on bamboo poles, signals wire in tricycles, despatch-riders on push-bikes. The vanquished went in tanks and armoured cars and half-tracks and lorries, trailing their howitzers and other weapons of conventional war. And all the while the rains the French had prayed for to save Dien Bien Phu splashed down cheerlessly on their retreat from Hanoi, a melancholy ending to an inglorious war.

"There was no honour in defeat here, only humiliation. In total manpower the French and the Vietminh had been almost equal. Technologically, the balance was heavily against the Vietminh. In all the eight years of the war they did not have a single plane. The flights of bombers and fighters that passed over the jungles and rice-fields each day were always French. So were the streams of transports, the Dakotas and Flying Box Cars, rushing supplies to every battlefront. The French had hundreds of artillery pieces; the Vietminh comparatively few."[1] Worse still, the French had been defeated in open combat on ground of their own choosing.

After 1950 the Vietminh fought a war in which every political and military move was a calculated and often predictable step towards victory. Although the strategy and tactics were unorthodox, the details had been announced in speeches and communiqués by various Asian communist leaders well before 1950. In spite of this, the great majority of French commanders did not understand these new doctrines of war and thus all their great efforts were in vain. Dien Bien Phu was the final payment for this lack of understanding.

Although this defeat shocked the Western world, it has had little effect on British military thought. Few military leaders understand the doctrines adopted by the Vietminh; even fewer have learned any lessons from this defeat of the most experienced army of the West.

The aim of this paper is to trace the development of the Asian communists' politico-military doctrine that led to the French defeat at Dien Bien Phu. It is not intended to suggest counter-strategy and tactics, but it is hoped that an understanding of this doctrine and of the French defeat will lead the reader to form ideas of his own.

There is an imperative need for the development of such ideas. Our predecessors failed to find a counter to the Japanese tactics in Burma and Malaya before 1942, with the result that many thousands of them died in prison camps. Similarly, many thousands of French soldiers died unnecessarily because their leaders had no counter to Vietminh tactics. Our turn may also come unless a solution is found in time.

PRELUDE

The Vietminh rebellion began in 1945, but made little headway against the French until the beginning of 1950. Up to this time the French claimed that one good battalion, supported by air, could move anywhere with impunity. In March, 1950,

[1] *Out of the Gun*, by Dennis Warner. (Hutchinson,)

several regiments of Vietminh troops launched heavy attacks on French posts along a 50-mile stretch of road south-west of Saigon. They destroyed 20 French block-houses, captured 500 arms, and inflicted 1,000 casualties. When a French mobile brigade rushed to counter-attack, the enemy had vanished.

Some weeks later, General Giap, C.-in-C. Vietminh forces, revealed the ' new ' tactics employed in this action. In a communiqué published in Rangoon on 14th April, 1950, he said: " Mobile warfare is characterized by big concentrations of troops of the central units, supported by local military formations and militiamen, who agree on uniting their force for one fixed battle, after which they should disperse immediately in order to avoid being followed by the enemy. The victorious outcome of the battle must in most cases be guaranteed beforehand. With the adoption of mobile tactics, the need for close co-operation between the troops and the civilians is now more transparent than ever before. The people must give a helpful hand to the troops in the repair of roads and in the transport of food and eventually of war booties. In order to save time and labour and to avoid superfluous transport of supplies, the people are also asked to build up local reservoirs of padi and cereals and, as a pre-requisite to this, to take part in the nation-wide ' grow more food ' campaign. The people can help the Army in other activities too, such as intelligence and liaison, and with militia units which are formed by civilians occasionally fighting alongside the Regular Army. The phrase ' peoples' war ' assumes its full meaning with this picture now being drawn in Vietnam both by the Army and the ordinary citizen of the Democratic Republic. The first battle fought along the lines of mobile warfare has been crowned with complete success. Undoubtedly the days to come will record more resounding victories which will lead to the final triumph of the forces of freedom over colonialism and servitude."

The adoption of these ' new ' tactics were of special significance. These were the tactics evolved by Mao Tse-tung which led to the final defeat of Chiang Kai-Shek on the mainland of China in 1949. It should not have been too difficult for the French to have realized this. Ho Chi-Minh, the leader of the Vietminh, and General Giap were both ardent Communists. Communist China recognized Ho in January, 1950, and despatched a military mission to Giap's headquarters. From this moment onwards the war followed the classic pattern so clearly illustrated in Mao Tse-tung's writings.

The story of the French defeat at Dien Bien Phu began, therefore, in 1926 when Mao Tse-tung led 1,000 ragged survivors of the disastrous ' Autumn Harvest ' uprising to the mountains of Hunan and Kiangsi in south China. Out of the struggle for survival in these mountains came a new politico-military science that has twice won overwhelming victories in near-major wars against superior forces. Its achievements were based on rigid rules and on conditions that prevail through much of Asia—and Africa. Strategy and tactics were evolved during the five campaigns against Chiang Kai-Shek between 1930 and 1934. They were developed in Shensi in north-west China after the ' Long March ' of 1934–35, and were perfected against the Japanese after 1937. Whereas the Chinese Nationalists tried to halt the Japanese advance with disastrous positional battles, losing thousands of lives and enormous quantities of equipment, Mao spurned the positional battle. His combination of mobile and guerrilla war resulted in the Communists controlling 100,000,000 people in 19 liberated areas at the time of the Japanese collapse. His tactics finally bore fruit in 1949, when the Kuomintang was destroyed and Communist China was born.

Mao's Apprenticeship—The Five Annihilation Campaigns

The First Annihilation Campaign

The first campaign began late in 1930 when Chiang Kai-Shek sent 100,000 troops, deployed in eight columns, into the Kiangsi hills. Mao had 30,000 effective troops, but he had completed their political indoctrination and had established a network of guerrillas to harass the enemy and gain information. The population had been indoctrinated and were ready for revolution. Mao's tactic was to avoid a positional battle and to wait for an opportunity. " Our strategy is one against ten," he said, " our tactic ten against one." Mao fought a series of minor dispersed actions until his opportunity came. He then concentrated and struck at the principal Kuomintang force at night. He achieved complete surprise and destroyed the Field Commander and his Staff, a divisional H.Q., and two brigades. " Not a man or a horse escaped," Mao boasted. Five days later, with another Kuomintang division decimated, Chiang Kai-Shek's first annihilation campaign ended in a rout.

The Second Annihilation Campaign

When planning the second annihilation campaign, Chiang Kai-Shek felt that there were two possible courses of action; either to concentrate in one striking force and probably never catch a glimpse of the Red Army or to enfold the Communists by blocking all exits and advancing towards the centre. He chose the latter course. Nearly a month went by before the Red Army moved. Mao wanted to be absolutely sure of victory. " We should strike only when we are positively sure that the enemy's situation, the terrain, the people, and other conditions are all favourable to us and unfavourable to the enemy. There will always be opportunities and we should not rashly accept battle," said Mao. His small force was now surrounded by the Kuomintang Army, but his moment had come. He struck at the 5th Route Army, whose morale was low and who had left themselves open to attack on terms which Mao considered satisfactory. He destroyed them, and in the next 15 days covered over 200 miles on foot through the hills, during which time he fought and won five battles against the encircling divisions. He captured more than 20,000 rifles and then withdrew to rest and regroup deeper in the mountains.

The Third Annihilation Campaign

Chiang Kai-Shek took personal command of the Kuomintang forces in the third annihilation campaign. With 300,000 men, including 100,000 of his elite personal troops, he renewed the attack within a month. His plan was to drive straight into the Red Army's territory and force Mao to make a stand with his back against the Kan River. Mao and his general, Chu-Teh, just managed to escape from the trap. They then seized the initiative and in five days attacked five different columns. They moved fast by night, feinting here and attacking there. Chiang's forces fought blindly and fruitlessly. They were misled, by repeated attacks from guerrillas and regional troops, into believing that they were engaging the Red Army when in fact Mao and Chu-Teh were miles away. At the end of three and a half months Chiang withdrew, leaving behind 35,000 deserters and vast quantities of equipment.

The Fourth Annihilation Campaign

In much the same way, and with constant application of the prime principles of mobility, surprise, and concentration of force at the vital point with economy of effort elsewhere, Mao broke the fourth annihilation campaign and captured a further 10,000 rifles for the now fairly elaborately equipped Red Army.

The Fifth Annihilation Campaign

Chiang massed nearly 1,000,000 troops for the fifth annihilation campaign. Meanwhile the Red Army had been built up to 100,000 effective troops. Mao felt ready to pass from the strategic defensive into a full strategic offensive. He planned to carry the war away from the Soviet zones and Kuomintang strongposts and to sweep through Kiangsu, Anhwei, and Kiangsi, using all his remarkable powers of mobility, concentration, and surprise in an offensive that would have linked up with the rebellious Kuomintang groups at Fukien. He then planned to strike Chiang off balance by threatening now at Hangchow, then at Soochow, at Nanking, Nuhu, Nanchang, and Foochow. It was a bold scheme, often skilfully copied years later in Indo-China, where the bewildered French forces in the campaigns of 1953–54 never knew where next the Vietminh Regular forces might appear. But the Chinese Communist Party was not prepared to accept such an ambitious plan. They felt that the Red Army was strong enough to fight a superior enemy at its own game; positional warfare. Mao was overruled, and under Party pressure the Red Army abandoned the tactics of concentration and manœuvre. The campaign began in October, 1933, and a year later half of the Red Army had been destroyed. The survivors, under Mao, managed to break through the Kuomintang forces and the 6,000-mile ' Long March ' began. Only 20,000 reached their destination in Northern Shensi in 1935.[2]

Development of Mao's Politico-Military Science

Introduction

From the end of 1935 until 1945, Mao developed his politico-military science on the lessons learned from the past and in the war against Japan. In his speech on " Problems of War and Strategy," Mao said: " Communists must contend for military power for the Party and for the people. . . . Every Communist must grasp the truth. Political power grows out of the barrel of the gun. . . . Everything in Yenan has been built up by means of the gun. Anything can grow out of the barrel of a gun. . . . Whoever wants to seize the political power of the State and to maintain it must have a strong army. . . ."

With this aim clearly before him, Mao developed his theories of war. The theories cover the strategy of guerrilla war and the evolution of guerrilla troops to Regular forces able to engage in mobile warfare. These doctrines show how a commander can build a force from a small cadre, capable of destroying a superior enemy. As far as possible, direct quotations from Mao's speeches are used, edited to cut out repetition and factors that have only a local bearing.[3]

" Guerrilla war steps out of the bounds of tactics and knocks at the door of strategy, demanding that problems of guerrilla warfare be considered from a strategic viewpoint. What deserves our particular attention is that such an extensive as well as protracted guerrilla war is a quite new thing in the whole history of war. If our enemy neglects to take this into account, he will certainly come to grief. Guerrilla warfare is distinguished from regular warfare and has its own characteristics, hence its strategic problems present quite a number of peculiarities.

" All guiding principles for military operations proceed without exception from one basic principle, i.e. to strive as far as possible to preserve one's own strength and

[2] For further details of these campaigns, including sketches of battles, see *Mao Tse-tung*, by Robert Payne. (Secker & Warburg.)

[3] *Selected Works of Mao Tse-tung* (Lawrence and Wishart).

annihilate that of the enemy. The directives or principles that should be adopted in order to attain this aim are as follows:—

(1) On our own initiative, with flexibility and according to plan, carry out offensives in a defensive war, battles of quick decision in a protracted war, and exterior-line operations within interior-line operations;

(2) Co-ordinate with regular warfare;

(3) Establish base areas;

(4) Develop into mobile warfare.

These items constitute the strategic programme in the entire guerrilla war and serve as the necessary means for preserving and expanding our forces, annihilating or ousting the enemy, and co-ordinating with regular warfare to win the final victory.

" Guerrilla warfare is different from regular warfare only in degree and in the form of manifestation. Offensives in guerrilla warfare generally take the form of surprise attacks. In regular warfare, although surprise attacks should and can be adopted, there are relatively few cases of catching the enemy unprepared. In guerrilla warfare there is a great demand for quick decision. This distinguishes it from regular warfare. Thus it can be seen that in guerrilla operations, concentration of the biggest possible force, secret and swift actions, surprise attacks on the enemy, and quick decision in battles are required.

" Of course there is in guerrilla warfare not only strategic defensive but tactical defensive which includes, among other things, containing and picketing action during a battle; the dispositions for resistance at narrow passes, strategic points, along rivers, or in villages to inflict attrition on the enemy and to wear him out; and rear-guard dispositions during withdrawal. But the basic principle of guerrilla warfare must be one of offensive, and its offensive character is even more pronounced than that of regular warfare. Because of its dispersed nature, guerrilla warfare can be spread wide, and the principle of dividing up the forces applies in many of its tasks, such as in harassing, containing, and disrupting the enemy, and in mass work, however when a guerrilla detachment or corps is performing the task of annihilating the enemy, and particularly when it is striving to smash an enemy offensive, its main forces must be concentrated. ' Gather a big force to strike at a small enemy segment ' remains one of the principles for field operations in guerrilla warfare. We must concentrate a preponderant force in every battle and adopt exterior-line operations to encircle and annihilate the enemy. We must encircle a part of the enemy, if not the whole, annihilate a part of the encircled, if not the whole, and inflict heavy casualties upon them; because to rout ten of the enemy's divisions is not so effective as to annihilate one of them. It is only by the cumulative effect of many such battles of annihilation that we can change the situation between the enemy and ourselves. However, final results are to be achieved mainly through regular warfare, while guerrilla warfare only makes a secondary contribution. Regular warfare and guerrilla warfare have one point in common, namely, to add up many minor victories into a major victory."

Initiative, Flexibility, and Planning

" In every war the opponents strive with each other for the initiative, since it means freedom of action for an army. The initiative results from correct estimations of the situation (of both the enemy and ourselves) as well as correct military and political dispositions. The initiative is not the natural gift of a genius, but something

achieved by an intelligent leader who studies with a receptive mind and makes correct estimations of objective conditions and correct military and political dispositions. Therefore, it is something to be consciously striven for, not something ready-made. The initiative can be finally gained only after success has been scored in an offensive. The offensive is the only means of annihilating the enemy as well as the principal means of preserving oneself, while pure defence and withdrawal can play only a temporary and partial role in preserving oneself and are utterly useless in annihilating the enemy. This principle is basically the same for both regular warfare and guerrilla warfare, with only a difference in degree in their forms on manifestation."

" Flexibility is a concrete manifestation of initiative. The directors of guerrilla war must understand that the flexible employment of forces is the most important means of changing the situation between the enemy and ourselves and gaining the initiative. The chief ways of employing the forces consist in dispersing, concentrating, and shifting them. In employing the guerrilla units, the director of guerrilla war is like a fisherman casting a net which he should be able to spread out as well as draw in. When a fisherman spreads out his net, he must first find out the depth of the water, the speed of the current, and the presence or absence of obstruction; similarly, when the guerrilla units are dispersed we must also be careful not to incur losses through an ignorance of the situation and mistakes in actions. A fisherman, in order to draw in his net, must hold fast the end of the cord; in employing guerrilla forces, it is also necessary to maintain liaison and communication and to keep an adequate portion of the main force to hand. As a fisherman must frequently change his place, so guerrillas should constantly shift their positions. Generally speaking, the dispersion of guerrilla units, i.e. ' breaking up the whole into parts ' is employed mainly in the following circumstances.

(1) When we threaten the enemy with a wide frontal attack because he is on the defensive and we are still unable to mass our forces to engage him.

(2) When we widely harass and disrupt the enemy in an area where his forces are weak.

(3) When, unable to break through the enemy's encirclement, we try to disperse his attention in order to get away from him.

(4) When we are restricted by the condition of terrain or in matters of supply.

(5) When we carry on work among the population over a vast area.

But in dispersed actions under any circumstances, attention should be paid to the following:

(1) No absolutely even dispersion of forces should be made, but a larger part of the forces should be kept at a place conveniently situated for its flexible employment, so that any possible exigency can be readily met and the dispersed units can be used to fulfil the main tasks.

(2) The dispersed units should be assigned clearly defined tasks, fields of operation, specific time limits and rendezvous, and ways and means of liaison.

" Concentration of forces, i.e. the method of ' gathering parts into a whole,' is adopted largely for the annihilation of an enemy on the offensive, although it is sometimes adopted for the annihilation of certain stationary forces of the enemy when he is on the defensive. Concentration of forces does not mean absolute concentration, but the massing of the main forces in a certain important direction while retaining or despatching a part of the forces in other directions for tasks mentioned.

"Although dispersion and concentration of forces in accordance with circumstances is the principal method in guerrilla warfare, we must also know how to shift (or transfer) our forces flexibly. When the enemy feels seriously threatened by the guerrillas he will send troops to suppress or attack them. Hence guerrilla units should ponder over the circumstances they are in; if it is possible for them to fight, they should fight right on the spot; if not, they should not miss the opportunity to shift themselves swiftly to some other direction. Sometimes the guerrillas, for the purpose of smashing the enemy units separately, may, after annihilating an enemy force in one place, shift themselves immediately to another direction to wipe out another enemy force; sometimes the guerrillas, finding it inadvisable to fight in one place, may have to disengage themselves immediately from the enemy there and engage him in another direction. If the enemy's forces at a place are particularly strong, the guerrilla units should not stay there long, but should shift their positions as speedily as a torrent or a whirlwind. In general, the shifting of forces should be done secretly and swiftly. Ingenious devices, such as making a noise in the east while attacking in the west, appearing now in the south and now in the north, hit-and-run, and night action, should be constantly employed to mislead, entice, and confuse the enemy. This wisdom in foreseeing changes and right timing is not easy to acquire except for those who study with a receptive mind and take pains to investigate and think things over. In order that flexibility may not become reckless action, a careful consideration of the circumstances is necessary.

"Without planning, it is impossible to win victory in a guerrilla war. The operations in a guerrilla area as a whole or the operations of a single guerrilla detachment must be preceded by the most comprehensive planning possible, which is the preparatory work for all kinds of activities. Questions of how to grasp the situation, to define the tasks, to dispose the forces, to carry out military and political training, to procure supplies, to make arrangements for equipment, to secure the help of the people, etc., should all be carefully considered and thoroughly worked out by guerrilla leaders and the results should be checked. Without this there could be no initiative, flexibility, or offensive. The plan for the first battle must be the prelude in the plan for the whole campaign and form an organic part of it. Without a good plan for the whole campaign it is absolutely impossible to fight a really successful first battle. If the battle prejudices the entire campaign rather than benefits it, then victory in such a battle can only be considered a defeat.

"The above points serve to illustrate the first problem concerning the strategic principles of guerrilla warfare. Once this problem is solved, guerrilla warfare will find in its military leadership a major guarantee of victory.

Co-ordination with Regular Warfare

"The second strategic problem in guerrilla warfare is its co-ordination with regular warfare. There are three kinds of co-ordination; in strategy, in campaigns, and in battles. The roles played by the guerrillas behind the enemy's rear; i.e., crippling and containing the enemy, disrupting his supply line, and raising the spirits of both the Regular armies and the people of the whole nation, all point to its strategic co-ordination with regular warfare. The great role of strategic co-ordination played by guerrilla warfare should not be overlooked. The leaders of the guerrilla units and the Regular armies should clearly grasp its significance.

"Guerrilla warfare also performs the function of co-ordination in campaigns. For example, in the campaign at Sinkow, north of Taiyuan, the guerrillas played a

remarkable co-ordinating role both north and south of the Yenmen Pass in wrecking the Tatung–Puchow railway and the motor roads running through Pinghsing Pass and Yangfang Pass. If each guerrilla area or guerrilla unit fights all by itself and neglects co-ordination in campaign operations, the role it can still play in the general strategic operations would naturally be reduced in significance.

" Finally, co-ordination in battle is the task of all guerrilla units in the neighbourhood of the battlefield on the interior line. In such a case, the guerrilla units should take up the tasks assigned by the commander of the Regular force, usually tasks to contain part of the enemy, disrupt his transport, spy on him, and act as guides."

The Establishment of Base Areas

" The third strategic problem of the guerrilla war is the establishment of base areas. We must spread a guerrilla war throughout the enemy-occupied area, converting the enemy's rear into his front and forcing him to fight ceaselessly. In order to safeguard his interests in his occupied areas, the enemy will certainly intensify every day his activities against the guerrillas, and he will certainly begin his relentless suppression of the guerrillas. Thus, it is impossible to sustain guerrilla war in the enemy's rear without base areas. The following problems must be understood and solved in the course of actually establishing them; types of base areas, the difference between guerrilla areas and guerrilla base areas, conditions for the establishment of base areas, consolidation and expansion of base areas.

" In a guerrilla war conducted in the enemy's rear, guerrilla areas must be distinguished from guerrilla base areas. Areas which are surrounded by the enemy but whose central parts are not occupied by him are ready-made base areas where the guerrilla units can conveniently develop guerrilla warfare. Areas which guerrillas could not completely occupy but could only constantly harass and attack are not yet guerrilla base areas but only guerrilla areas. Such guerrilla areas will be transformed into base areas when they have gone through the necessary processes in a guerrilla war, that is, when a large number of enemy troops have been annihilated or defeated, the puppet régime destroyed, the activity of the people called forth, popular organizations formed, the people's armed forces developed, and political power established. To convert a guerrilla area into a base area is therefore a painstaking process of creation, for whether a guerrilla area has been transformed into a base area depends on how far the enemy is annihilated and the masses of the people are aroused. Any of the enemy-occupied territories therefore falls into one of the following three categories: first, guerrilla base areas controlled by our guerrilla units and our organs of political power; secondly, areas in the grip of imperialism and the puppet régime; and thirdly, intermediate zones contested by both sides, i.e. guerrilla areas. The duty of the leaders of guerrilla war is to exert their utmost to expand the territories of the first and third kinds and to reduce the territories of the second kind. This is a strategic task of guerrilla warfare.

" The basic condition for the establishment of base areas is that there should be an armed force employed to defeat the enemy and to arouse the people into action. Leaders must exert their utmost to build up one or several guerrilla units and, in the course of the struggle, develop them gradually into guerrilla corps and eventually into Regular units and corps. The second condition is that the armed forces should be employed in co-ordination with the masses of the people to defeat the enemy. All power, including the armed forces, should be employed to arouse the people. In the course of such struggles we must arm the people, organize self-defence corps and

guerrilla units. In the course of such struggles we must form mass organizations; workers, peasants, youth, women, children, merchants, and members of the free professions, according to the degree of their political consciousness. In the course of such struggles we must proceed with the elimination of the forces of collaborators in the open or under cover. Furthermore, the economic conditions should be pointed out. The economic policy for the guerrilla base areas must be based on the principles of reasonable distribution of the financial burden and protection of commerce; neither the local political power nor the guerrilla units must violate these principles, for otherwise the establishment of base areas and the effort to keep up the guerrilla war will be adversely affected.

" Consolidation (i.e. organizing the people and training the troops) is necessary for keeping up the war as well as expanding, for without consolidation no vigorous expansion is possible. If we only attend to expansion and forget about consolidation in guerrilla warfare, we cannot withstand the enemy's attacks, and the result is that not only is the territory gained in the course of expansion lost, but the very existence of the base areas is endangered."

Development into Mobile Warfare

" The fourth strategic problem in the guerrilla war is its development into mobile war. For the transformation of the guerrilla units now engaged in a guerrilla war into a Regular army which can wage a mobile war, two conditions are required: increase in their numbers and improvement in their quality. For the former we can adopt the method of amalgamating small units; the latter depends on steeling the fighters and improving their armaments in the course of the war.

" The development of guerrilla warfare into mobile warfare does not mean the abandonment of guerrilla warfare, but the gradual formation, in the midst of an extensively developed guerrilla warfare, of a main force capable of conducting a mobile war, round which there should still be numerous guerrilla forces carrying on extensive guerrilla operations. These numerous guerrilla forces add powerful wings to the main force and also serve as an inexhaustible reserve for its continuous expansion.

" To raise the quality of the guerrilla units we must improve them politically and organizationally along the lines of their equipment, military training, tactics, and discipline; gradually remoulding them on the pattern of the Regular Army and reducing their guerrilla style in work. Politically, it is imperative to make both the commanders and the rank and file realize the necessity of raising the guerrilla units to the level of the Regular Army, and to guarantee its realization by means of political work. Organizationally, it is imperative to establish, step by step, Regular military and political units and to acquire such a regular system of supply and medical service as are required of a Regular corps. In the matter of equipment it is imperative to improve its quality, acquire new types of arms, and increase the indispensable means of communication. In the matter of discipline it is imperative to raise the guerrilla units to a point where uniform standards are observed, where every order and requisition is fulfilled without fail, and where all laxity and unbridled independence are done away with. It is comparatively easy to reach this goal in places where there are detachments or cadres despatched from the Regular armies. Hence all Regular armies have the responsibility of assisting the guerrilla units in their development into Regular armed units."

Mobile War

"The strategy should be that of employing our main forces in mobile warfare, over an extended, shifting, and indefinite front; a strategy depending for success on a high degree of mobility and featured by swift attack and withdrawal, swift concentration and dispersal. The concentration of force we advocate is based on the principle of guaranteeing an absolute or relative superiority on the battlefield. To conduct operations on a front of vital importance we must have an absolutely superior force (e.g. a force of 40,000 was massed to beat Chiang Hui-Tsan's 9,000). In dealing with a weaker foe on a front of no importance, a relatively superior force is sufficient (e.g. 10,000 were employed to beat Liu Ho-Tin's Division of 7,000 in Kienning). We must use large-scale mobile warfare rather than the simple positional war of extensive trench-work, deep-massed lines, and heavy fortifications. This does not mean the abandonment of vital strategic points, which can be defended by positional warfare as long as profitable, but the pivotal strategy must be mobile warfare. Fortified warfare must be utilized, but it will be of auxiliary and secondary strategic importance. Geographically the theatre of the war is so vast that it is possible for us to pursue mobile warfare with the utmost efficiency and with a telling effect on a ponderous, slow-moving war-machine like Japan's."

The War in Vietnam

In his statement of policy written to commemorate the 28th anniversary of the Communist Party of China, Mao Tse-tung said: "Externally we must unite in a common struggle with the peoples of all countries and with those nations that treat us as equals. This means allying ourselves with the Soviet Union, with every new democratic country, and with the proletariat and broad masses in all other countries. This means forming an international united front. Our dictatorship must unite with all international revolutionary forces. This, then, is our formula, our main experience, our main programme." On 2nd September, 1945, Ho Chi-Minh, an old and experienced revolutionary, proclaimed the new Democratic Republic of Vietnam. Severe fighting broke out in Hanoi in December, 1946.

The person often accused of engineering the events which led to the outbreak of war in December, 1946, was Vo Nguyen Giap. He had been a successful guerrilla leader in northern Tongking against the Japanese from 1943 until the end of the second World War. Under his tireless leadership and undeviating adherence to Mao's theories, one man in every three in the Vietminh Regular Army became a member of the Communist Party. The political commissar system was extended to the section level, and Marx and Mao became the troops' daily catechism. Enlistment in the Army became the highest form of patriotic service. Recruits were blooded as village guards, and graduated through militia units and guerrilla units to the Regular Army and the Communist Party. Giap coupled Mao's passion for indoctrination with infinite care for detail and rehearsal. He planned to the last shot in a battle, and although this resulted in rigidity in action, it also led to victory.

At the end of 1949 the war was still purely guerrilla. The Vietminh forces, scattered indiscriminately over a thousand miles, lacked the essential main striking force and the supporting civil columns that are essential for victory according to Mao's theories. Within a year the adoption of Mao's strategy turned a war of attrition into one of annihilation. Guerrillas remained spread throughout the country but they were now co-ordinated with politically indoctrinated militia organizations and controlled from a central headquarters. Thousands of French

troops were tied down in static defence. On 15th September, 1950, the new crucial phase of the war began. Three divisions of trained Regulars struck at the whole chain of French posts guarding the strategic Tongking–China border. The first battle lasted two days, the French resisting to the end in the Dongkhe fort on the Langson–Caobang border road. Its fall split the main border garrisons and prevented both effective reinforcement and withdrawal. A French column fighting its way to Caobang, the provincial capital, was ambushed and destroyed. Caobang fell after a week. The French, long accustomed to the sniping mortar and a 20-man ambush, found that they were fighting a full-scale war in which they had lost 3,000 men in the first encounter.

The Vietminh swept south-east along the frontier road, reducing fort after fort, and in six weeks had secured 100 vital miles of the Vietnam–Chinese border, thus establishing a direct link between China and the northern mountains of the Red River delta which was already a Vietminh sanctuary. Giap then marched south from this base for what he hoped would be the decisive battle of a short war. His target was a French force of two reinforced mobile groups near the village of Vinh Yen at the western apex of the Red River delta. It was Giap's first and only major mistake. The country around Vinh Yen is open, with undulating hills in which the French could manœuvre. Their supporting fire power cut Giap's force to pieces, but they failed to win a decisive victory as Giap dispersed when he saw that the battle was lost.

This French victory had an unfortunate result. It led French officers and men to believe that they could beat the Vietminh anywhere in a set-piece battle. This outlook became so pronounced that finally the dominant French strategical theme was somehow to coax the Vietminh into such a battle. This victory thus prepared the way for Dien Bien Phu. The Vietminh lost 9,000 men at Vinh Yen. The result was that the Communist (Laobong) Party took over the leadership of the war. There was no more talk of a quick war and swift victory. Propaganda became of the ' blood, sweat, and tears ' variety. The first communiqué issued by the Laobong Party after Vinh Yen called for the abandonment of frontal assault, immediate reversion to guerrilla warfare, establishment of more bases in the enemy's rear, an increase of the main forces of the local people's armies, and militia and guerrillas on the Mao pattern. The Regular Army was " to be built up and conserved for major victory and not squandered on minor, piecemeal, adventuristic operations that risked defeat by attrition."

Vietminh units began to infiltrate into the Red River delta. They established contact with the villagers and set up guerrilla areas within the French lines. While the French built their blockhouses and planted their mines and put up barbed wire, the Vietminh went to work on the local population. Every school became a Communist breeding ground of hate always directed firmly against the United States, " whose planes the French flew, whose bombs the French dropped, and whose napalm the French used to destroy homes and villages." The Vice-Minister for Education summed up the whole education plan very aptly in a booklet called *Educational Plans in Vietnam*. " Since the August Revolution of 1945 the intellectual standard of the masses in Vietnam has been considerably raised because it has the support of the masses. No comparison can be drawn between what our people know today with what they knew before the revolution. Four years ago the number of Vietnamese who were able to handle a rifle was small, but today there is scarcely any Regular, militiaman, or guerrilla who has not at one time or other killed a French colonialist with his rifle. Today, all young women from the remotest village are acquainted with

collective life and understand the more-production campaign launched by the Government. Any five-year-old boy can distinguish a French single-engined plane delivering supplies or making a reconnaissance from a fighter plane which has the only duty of killing." The peasants were not pro-Vietminh at the beginning. At first they were suspicious and reluctant to accept the new theories. They were essentially conservative and many of them were Catholics, with the result that they needed copious blood-letting and the emotional excitement of the People's Courts and other psychological paraphernalia to stir them into action on behalf of the Vietminh. Later, every peasant was required to contribute three months' service to the Army each year. The fantastic forced marches that Giap achieved with his troops were wholly dependent on this material to provide the expendable coolie chains hundreds of thousands strong. These supply columns melted into the padi fields and jungles at the first sign of French aircraft, re-forming when the danger had passed.

Slowly the Vietminh built up their forces in the Red River delta. By September, 1953, they held 2,902 of the 6,492 villages in spite of the French mopping-up operations. These operations achieved little. The bulk of the French forces was dependent on the roads running through the padi. The Vietminh either cut the roads into sections and dumped it in the padi, or split it with trenches, or sowed mines under the tarmac. The French spent the days rebuilding the roads and the Vietminh spent the nights destroying them again when the French had withdrawn to the security of their blockhouses. One by one the French forts outside the delta were demolished by night attacks, the Vietminh using rocket launchers and 75-mm. guns at point-blank range. French troops were systematically annihilated by ambushes.

Meanwhile, Giap drew off the French forces from the delta by a number of threatening moves against Laos and central Vietnam. This resulted in a number of French airborne operations which met with initial local successes, but the Vietminh invariably faded away before a decisive victory could be gained. Attempts were made to cut the Vietminh lines of communications with China with airborne troops, but in most cases Giap managed to concentrate superior forces at the vital point. In one operation near Hoabinh the French lost over 5,000 men before being forced to withdraw, and in others they were eventually bottled up near their airheads. Again it was Mao's strategy of one against ten and tactic of ten against one. Mixed native commando groups were dropped behind the Vietminh lines in an attempt to ' out-guerrilla ' the guerrillas, but these were too weak to influence the outcome of any particular operation.

When all attempts had failed to force Giap to a decision on ground not of his own choosing, two possible solutions remained; either to attack the enemy's main bases in the Thai Nguyen–Tuyen Quang redoubt, or to place strong forces astride the traditional invasion routes into Laos. In spite of the entreaties of General Cogny, who appeared to understand the nature of the war in Indo-China better than any other commander, General Navarre, the C.-in-C., chose to defend Laos. At the same time he hoped to create a sufficiently attractive bait to draw Giap's Regular divisions to a positional battle. The bait chosen turned out to be an oblong plain, about ten miles long and six miles wide, in which the Japanese had once built an airfield. It contained the village of Dien Bien Phu and the road junction to north-western Laos, to China, and to the Porte de Chine in the north-east. The mountains rise steeply from the plain of Dien Bien Phu, giving a basin effect. The floor of the plain is flat with low knolls surrounding the airfield. Here General Navarre hoped finally to force Giap's hand and win a decisive battle in the open on conventional lines.

This plan had certain strategic advantages. A strong French base here would restrict Vietminh movement into northern Laos. It could also serve as a strong base for commando raids behind the Vietminh lines. It could strangle the flow of supplies from China, and by carrying the battle into Vietminh territory, might draw Giap's Regular units from the Red River delta. Strategically this plan was sound, but it had serious tactical disadvantages and was based on bad intelligence. Any force there would be dependent on air supply and on air support in lieu of weight of artillery. This dependence on air supply inevitably led the French to base their defences on the airstrip. In this case the strip was in a bad tactical position. It was overlooked by the surrounding mountains which were too far away to include in the defence layout, but close enough for enemy artillery observation.

The French did not consider the reliance on air supply and support a disadvantage. In November, 1952, the Vietminh had attacked the French position around the airfield at Na-San. The position was a strong one on commanding heights. The Vietminh attacked at night without the usual superiority for a major action, but succeeded in overrunning a number of French positions and were in a commanding position at daybreak. The French were saved by their artillery and by fighter-bombers that drenched the Vietminh with napalm. The Vietminh were thrown back with 1,000 casualties. General Navarre expected the same result at Dien Bien Phu, but Giap had learned some lessons from Na-San.

French intelligence credited Giap with 40 to 60 medium howitzers capable of firing 25,000 rounds. This estimate appears to have been based on Giap's attack on Na-San two years earlier and did not credit him with any improvement. French defences were constructed to withstand a similar artillery attack.

Three French parachute battalions dropped on Dien Bien Phu on 20th November, 1953, scattering a Vietminh mortar unit and several rifle companies that were training there at the time. These withdrew to the high ground around the valley and watched the French preparations. The main defences were sited on the small knolls around the airfield. There were two independent battalion positions on two small hills about a mile to the north of the main positions. Another position, containing most of the artillery, was sited on flat ground two and a half miles south of the main position. The size of the plain of Dien Bien Phu prevented the French occupying the high ground surrounding the plain even with covering troops. From 20th November, 1953, until 13th March, 1954, the French built up their forces and dug, wired, and mined.

Dien Bien Phu gave Giap the chance that he had been waiting for. He planned for victory unhurriedly and methodically. Throughout the winter nights the Molotova lorries came in from China and unloaded their cases of 105-mm. howitzers, 120-mm. mortars, and anti-aircraft guns. They were carefully dug in on the hills and camouflaged, allowing the French to prepare without interference and their planes to fly in and out unmolested. However, Giap's main problem was to get General Navarre to commit his reserves before the attack on Dien Bien Phu opened and also to distract him from the Vietminh build-up.

Giap had four divisions in the Thai highlands and in the northern part of central Vietnam, about equal distance between the Red River delta and Luang Prabang in Laos. In December, two of his regiments struck across the Annamite mountains for Thakhek and Seno. They inflicted heavy casualties on a French force sent out to intercept them, which then withdrew to the unfortified airfield at Seno. General

Navarre reacted as expected. Seno, 400 miles from the main battle areas, was hurriedly fortified and a separate operational group consisting of approximately 10 battalions was formed to defend it.

Meanwhile, the Vietminh regiment heading for Seno crushed the smaller French posts strung out along the road. A French force sent to the rescue fell into a severe jungle ambush and its leading battalion was practically annihilated. Two French parachute battalions fought a valiant delaying action in front of Seno, but instead of attacking the now well fortified airhead, Giap's forces disappeared into the jungle only to reappear 200 miles south 20 days later. Another Vietminh force then appeared on the Moi Plateau and attacked the lightly defended French posts there. In northern Laos the entire 316th Vietminh Division, after taking the airhead of Lai Chau, 55 miles north of Dien Bien Phu, marched on Luang Prabang. General Navarre hurriedly airlifted ten battalions to this area to counter the threat. Giap had now succeeded in neutralizing the bulk of the French reserves. At the same time Vietminh had increased their hold on the Red River delta, and by January, 1954, held 3,266 villages to the French 1,960.

What happened next cannot be readily explained in terms of military strategy. With Dien Bien Phu threatened, central Laos invaded, northern Laos under attack, and the delta more infiltrated than ever, General Navarre launched a combined land and amphibian attack against a stretch of communist-held coast in southern central Vietnam, that had been in communist hands since 1945 and was of little military use. Yet this operation ("Atlante") diverted 22 battalions from the delta when their presence there may have made Giap think twice about attacking at Dien Bien Phu. Giap's moment had come. He gave orders for the final concentration of his forces at Dien Bien Phu. Four infantry divisions (approximately 45 battalions) and one artillery division concentrated against 12 French infantry battalions and two and a half artillery battalions. Surprise was furthered by keeping secret, until the assault, their anti-aircraft and field artillery capable of cutting off French airlanded supply.

The attack began at 1730 hrs. on 13th March, 1954, with an artillery barrage of an intensity hitherto unknown in the Indo-China war. Instead of the 40 to 60 guns expected, the Vietminh had over 300. The first attack was on one of the isolated northern positions which was manned by a battalion of seasoned veterans. Six Vietminh battalions attacked at dusk under cover of the intense artillery barrage. The position was overrun and the French battalion was annihilated. The second northern battalion position was overrun the following evening, also by six Vietminh battalions. Neither of these two battalion positions was mutually supporting. The French artillery in the southern battalion position was largely neutralized. This position was unable to influence the battle and it was allowed to exist until the end. The French air power was unable to knock out the Vietminh field guns because of the Vietminh anti-aircraft guns. The field guns prevented the French using their airstrip effectively for re-supply while the anti-aircraft guns made the airdrops increasingly inaccurate.

There is little doubt that a sustained Vietminh attack would have destroyed the garrison in the first three days. The French bunkers had been built to withstand harassing mortar fire and 75-mms., not the barrages the Vietminh 105-mm. guns and 120-mm. mortars put down. Bunkers collapsed under the weight of the fire and casualties were high. But the losses the French inflicted against the 'human wave' tactic on the northern battalion positions were severe and for the remainder of the battle Giap was more cautious with the lives of his men.

Attempts were made to create a relief column, and about 5,000 men were gathered for the operation, but the attempt was abandoned because there were insufficient reserves left for an even chance of survival against the 40,000 Vietminh troops around Dien Bien Phu. Furthermore, the logistical problem of supplying by air a mobile force over several weeks, in addition to supplying Dien Bien Phu with the daily 200 tons needed, was beyond the capabilities of the French. The garrison was, however, reinforced by parachutists. Two battalions were dropped in after the initial Vietminh assault and further companies, platoons, sections, and individuals dropped in as the battle progressed. At the beginning of the battle the French managed to land a few aircraft by moonlight and the wounded were evacuated, but by the end of March the airfield was under machine-gun fire and this was no longer possible. Slowly but methodically the Vietminh gained ground. It now became just a matter of time.

At about 1900 hrs. on 7th May, 1954, Platoon Commander Ba The of the Vietminh planted a red flag with the gold star of the Communist-led Democratic Republic of Vietnam on top of the headquarters bunker of Dien Bien Phu. An army that had begun its existence ten years ago as a small guerrilla force had annihilated in open combat the cream of a well-trained Western army equipped with nearly all the modern implements of war. It had destroyed the main fighting strength of:

1st, 2nd, 5th, 8th Colonial paratroop battalions.
1st and 2nd Foreign Legion paratroop battalions.
5th Vietnamese paratroop battalion.
1st and 3rd Battalions of the 13th Demi-Brigade of Foreign Legion.
1st Battalion of the 2nd Foreign Legion Inf. Regt.
3rd Battalion of the 3rd Algerian Tirailleurs.
1st Battalion of the 3rd Algerian Tirailleurs.
1st Battalion of the 4th Moroccan Tirailleurs.
2nd and 3rd Thai Battalions.
3rd Battalion of the 3rd Foreign Legion Regiment.
2nd Battalion of the 1st Algerian Tirailleurs.
5th Battalion of the 7th Algerian Tirailleurs.
Two and a half battalions of Artillery.
Ten independent Thai companies.
One armoured company (10 tanks).
Miscellaneous supporting arms and services.

This disaster only deprived the French of about 4 per cent. of their total military manpower in Indo-China, but it broke their will to continue the war. Hostilities ended on 21st July, 1954, after a cease-fire had been negotiated at Geneva. The eight years of war had cost the French about 106,000 dead or missing.

Epilogue

It is not the intention to labour the reader with lessons or even personal conclusions, but only to leave behind a few thoughts.

It is clear that Western technical superiority does not guarantee victory in this type of warfare. Indeed, the story illustrates the limited usefulness of air superiority in such a war. General L. M. Chassin, the former commander of the French Far Eastern Air Force, goes as far as to assert that such wars cannot even be won by a nuclear arsenal. It would seem that the only way to win is to have men trained and equipped for this type of fighting, and commanders well versed in Mao's politico-military doctrines.

The present British thought on jungle warfare is based on experience against the Japanese. However, the Japanese fought quite differently to Mao's disciples, who seldom depend on an established L. of C. or withdrawal route. One wonders whether the 'jungle hook,' cherished as the panacea to all jungle tactical problems, will be successful against this different enemy; or will Mao be right in our context when he said, " our enemy made mistakes. He refused to admit that fighting the Red Army required strategy and tactics different from fighting other forces. Relying on his superiority in various respects, he underestimated us and stuck to his old methods of warfare ".

Some people may be inclined to hide behind the comforting thought of our victory over the Chinese in Korea, in the same way as the French comforted themselves with the victory at Vinh Yen. However, Korea and Vinh Yen were as contrary to Mao's doctrines as the Chinese tactics in the 5th annihilation campaign. The fact that all three led to military defeat must have amply demonstrated to them the folly of deviating from Mao's principle that it is unwise to attempt to beat the enemy in the open at his own game when the conditions necessary for a guaranteed victory are absent.

Another comfortable excuse for complacency is the thought that we defeated the Communist guerrillas in Malaya before they were able to develop to the strength of those in Vietnam. This is erroneous thinking because there was little chance of such development at that time. Malaya did not have ready-made guerrilla material in sufficient numbers (i.e. peasants) to form or support such a force, neither was the countryside able to provide sufficient food for a jungle force of Vietminh size. There was no neighbouring Communist State to provide the constant stream of war materials necessary for decisive operations against a Western Power. Furthermore the Communists in Malaya had not adopted Mao's techniques. They had not carried out political indoctrination of the villagers, but had relied almost solely on intimidation. There were no militia units, no village guards, no military missions, and no secure guerrilla base areas. Although at one stage the guerrillas were numbered in some thousands, there was no attempt to concentrate to destroy even one British battalion. In short, they were amateurs in comparison with the Vietminh forces.

The Communist attempt to seize power by force in Malaya was premature. Mao Tse-tung was well aware of this, and in his directive that arrived in Malaya at about the same time as General Templer, he pointed out the mistake the guerrillas had made. He called for a cessation of all acts of sabotage, arson and intimidation, calculated to alienate the masses. He ordered the expansion and consolidation of the mass organizations, and the penetration of trade unions, political parties, the Home Guard, and schools. These latter activities have been reasonably successful in Singapore, and will serve as a valuable foundation should a second military attempt be necessary.

Unless the independent countries of Indo-China, supported by S.E.A.T.O., can find a counter to Mao's politico-military methods, Communist expansion into South-East Asia is inevitable. A study of the map shows that Laos is the next logical objective for Asian Communism, as it is the gateway to the remainder of Indo-China and to Burma. The same process of internal politico-military operations, backed by the external threat of the Chinese 'Gun,' that led to the fall of North Vietnam may also lead to the fall of Laos unless the Communists can be beaten at

their own game. It may even now be too late to save Laos, as many years of political and guerrilla infiltration has taken place; which is the basis of Communist success.

If Communist expansion in South-East Asia continues, S.E.A.T.O. may be forced into direct military action under Article 4 of the South-East Asia Collective Defence Treaty. Britain, as a signatory of this Treaty, may be obliged with other S.E.A.T.O. countries to face a highly developed and unorthodox mode of warfare in a region where, unlike Korea, it may well nigh be impossible to impose the conditions for the success of linear and positional war. Unless Mao's doctrines are understood and unless S.E.A.T.O. forces are geared to this mode of warfare, another disaster like Dien Bien Phu may well be inevitable. The words of Somerset Maugham are perhaps appropriate to provide a more hopeful ending: "The inevitable is only what a fool hasn't the wit to avoid."

THE ASCENT OF THE WEST PEAK OF MOUNT PAGET

By Captain V. N. Stevenson, Royal Marines

WHEN I heard of my appointment to H.M.S. *Protector*, I immediately thought about an attempt to climb Mount Paget in South Georgia. I had heard a great deal about the mountain's reputation for inaccessibility and bad weather, and I wrote to the previous O.C.R.M. of H.M.S. *Protector* and to members of expeditions who had been to South Georgia to try to get more details of the mountain. It soon became clear that the best chances of success would be from the south, and although no one had attempted it from this side, photographs showed a feasible route up the south-west spur. The other piece of advice I received was that I would need at least six weeks for any chance of success.

All the previous attempts had started off from the north coast, near Grytviken, necessitating an overland route of considerable difficulty and length. I had other ideas. If I could persuade the captain of H.M.S. *Protector*, Captain D. N. Forbes, to take the ship around to the south side of the island, we would require much less time. The snag about this plan was that not only is this coast a lee shore for icebergs; it is also practically completely unsurveyed and the Admiralty Pilot warns ships not to approach it! However, when Sir Vivian Fuchs lectured to the ship's company in Plymouth, I talked to him about Paget and he mentioned to Captain Forbes that it would be a worthwhile project.

My plan therefore was to be landed on the south coast by helicopter and no one could have been of more help or given more co-operation than Captain Forbes in taking H.M.S. *Protector* into uncharted and dangerous waters.

The Mountain

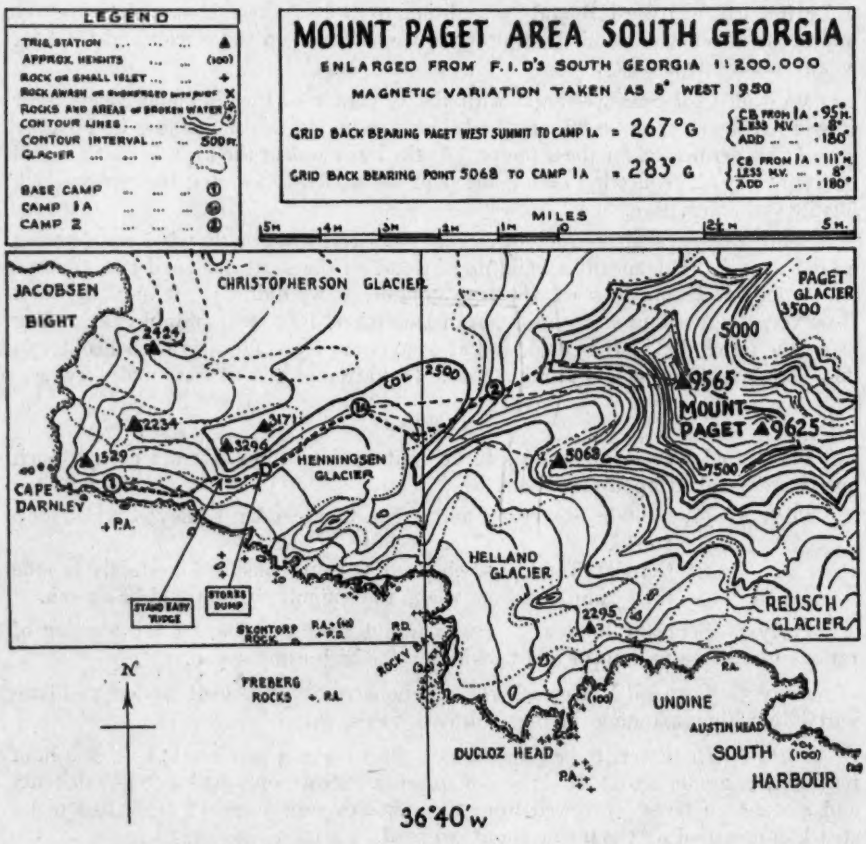
Mount Paget is the highest mountain in South Georgia and it has two distinct summits, connected by a ridge. The east, or true summit, is 9,625 ft. and the west peak is 9,565 ft. high. These heights are only approximate as no accurate survey of this area has been carried out—in fact, no one had been within ten miles of the foot of the mountain and the whole of the south side, where our intended route lay, was completely unexplored. The only people to have landed on the beaches were sealers. The whole area consists of huge crevassed glaciers ending in the sea and divided by precipitous rock and ice ridges.

Therefore our plan to attack from the south was to be the first attempt from this side—the other two serious attempts had been from the north. We were also to be the first people to penetrate inland, and thus our approach route was also entirely unexplored. The other serious factor against us was the weather. Mount Paget is notorious for its bad weather and as we only had five days available, this obviously would be an important and maybe decisive factor in determining our chances of success.

Preparations

Before we left England I had formulated a rough plan that envisaged landing on the coast between the Henningsen and Helland Glaciers and following the west ridge (see map 1) to the west peak and then the ridge to the true summit. No one knew how difficult this connecting ridge would be to traverse, if indeed it would be possible at all to reach the true summit *via* the west peak.

During our stay in Gibraltar I was fortunate to meet Duncan Carse, who was travelling to South Georgia in the survey ship H.M.S. *Owen*. He had been responsible for producing the latest map of South Georgia and probably knows the area better than anyone else. He advised landing to the west of the Henningsen Glacier, travelling up its west side, and doing a ' left flanking ' attack, with a high camp at the head of



the Christophersen Glacier and thence to the west peak. I am very grateful for his advice regarding the landing zone, even though his left flanking route could not be forced. As we eventually saw, this might have been very difficult to complete due to an unmarked mountain blocking the way.

Only one member of the detachment, besides myself, had ever done any snow climbing before. This was Corporal Reverley Todd, R.M., who was to prove of the greatest assistance as he was my only cliff assault instructor and was eventually in the summit party. However, all the detachment had done five days' rock climbing in Cornwall during their detachment training and also a day in Gibraltar. On our way down South America we had a day's climbing in Chile, where I attempted to teach snow technique on the steep earth foothills of the Andes. In the Falkland Islands we had a four-day detachment camp to practise a helicopter landing and to

familiarise the party with living in tents and using the cooking gear and rations. We were able to get in a further two days' rock climbing, and of course we had long walks to try to get as fit as possible after our weeks of forced inactivity aboard ship.

I decided to take a total of 16 ashore to attempt the climb and I invited the Supply Officer, Lieut.-Commander (S) M. K. Burley, to come along too. He had led a Dartmouth 'Outward Bound' expedition to Norway and I was keen to have another member who could ski in order to travel faster on the glacier and to assist as a reconnaissance party.

We sailed for South Georgia with the Governor of the Falkland Islands, Sir Edwin Arrowsmith, on board. He had shown much interest in our idea and readily gave us his permission for the attempt. At the last moment the captain sent a signal to C.-in-C., S.A., requesting permission, and we anxiously awaited the reply, which luckily was affirmative.

South Georgia had been having severe gales and a southerly wind was blowing on our arrival. This meant a build-up of cloud on the south face and this was one reason for our failure to reach the true summit, as we didn't see it until too late. However, the morning of Saturday, 10th December, 1960, was suitable for landing us on the beach, below the cloud, and at 1330 hours I was flown in by helicopter to do a reconnaissance for our landing zone. Our attempt was at least under way.

The Plan

The team of 16 members was to be split up into three distinct groups, each one interdependent upon the others.

Party 1.—(*a*) Captain Stevenson and Lieut.-Commander Burley; recce group on ski.

(*b*) Corporal Todd + 5, who were to be responsible for establishing the high camp and from whom the summit party would be chosen.

Party 2.—Sergeant Rainey + 3, who would be responsible for the ferrying of rations from Base to Camp I and backing up the high camp group.

Party 3.—Corporal McKerracher + 3, who were to act as load carriers and base party—including manning the rear link back to the ship.

Camps.—There were to be three camps: Base—4 × 4-man tents; I—1 × 4-man tent + 4 × 2-man tents; II—4 × 2-man tents. As we only had 4 × 4-man tents and 4 × 2-man tents (borrowed from the ship's expedition gear), tents had to be struck and carried up the mountain as required.

Reserve rations and fuel.—Although we were allowed five days for the attempt, Saturday, 10th December–Thursday, 15th December, we had to allow an adequate reserve of rations and fuel in case we were beset by bad weather. We allowed for twice the requirement overall, and three days' reserve rations and fuel were taken to Camp I. Every man carried a 24-hour pack with him at all times in case of emergency.

Loads.—We worked on the assumption that a man can carry a 50-lb. load over difficult terrain. This was a very convenient weight, as it was the weight of a man's Bergen rucksack and sleeping roll plus a 2-man tent. It was also the weight of two 5-man ration boxes, or the weight of a 4-man tent. Every man would have approximately two lifts to do for the first two days in order to lift the required stores to Camp I. With a working load of 750 lb. per helicopter flight, we could get all personnel and stores ashore in eight lifts, or four per helicopter.

The Build up

Day 1.—At 1330 hours on Saturday, 10th December, 1960, Burley and I set out from a position just north of Annenkov Island to reconnoitre the landing zone. I had hoped to establish a base camp above the icefall of the Henningsen Glacier, approximately where the stores dump was to be. However we saw that the area was heavily crevassed and, as it later transpired, this might have been a dangerous position. The beach to the north of the Henningsen icefall was covered with seals, so this made a base camp impossible here also. So we were forced to go farther west towards Cape Darnley, where we found a suitable landing zone about 100 feet above sea level and near running melt water.

Having decided on the position of the landing zone, we decided also to have the base camp in the same area, thus ruling out the necessity of carrying all our stores over the first icefall. The helicopters started their airlift, and in spite of a heavy snow blizzard, base camp was fully established by 1630 hours.

Meanwhile, Burley and myself found a way through the first icefall and after two hours of hard going across alternate ice and deep snow, reached 'stand easy' ridge. I was rather worried about the difficulty of the first part, as there had been some quite steep ice work to avoid crevasses, but the preparatory rock climbing paid dividends and no one was unduly worried over this difficult stretch, even carrying heavy loads. The pair of us now put on our skis and set off up the west side of the Henningsen Glacier, and by 1930 hours had reached a position a mile short of where Camp IA was eventually established. The reason we called it IA was that I had hoped to press on farther than this for our second camp, but the going proved to be too difficult. We could see that our 'left hook' approach was going to be more difficult than we had anticipated, as there were in reality huge ice cliffs instead of the col (or pass) marked on the map at 2,500 feet. We were unable to see Paget at all as it was covered in heavy cloud, and for the most part visibility was down to quarter of a mile.

At 2000 hours we retraced our tracks and in only 15 minutes had reached the stores dump—it had taken nearly three hours to get up to the head of the glacier from here. To our great surprise we now saw heavily laden figures approaching, led by Sergeant Rainey and Corporal Todd. It had really been hard work for them over unfamiliar terrain, but their splendid effort gave us a great advantage with which to start the next day. They had managed to carry, with the exception of one 4-man tent in use at base, all the food, fuel, and tents that we would need for the higher camps. Every one was very tired, and after arranging the stores we all returned together and reached base in the dark at 2230 hours.

I felt very pleased with the day's work. Not only had we established a good and safe base camp, but we had found a way through the initial icefall and a route to the head of the Henningsen Glacier. Equally important was the successful establishment of our stores dump above the icefall, and this turned out to be deciding factor in our race against time.

Day 2.—By 0630 hours we were ready to move. Only the wireless operator remained in base camp as the rest of the team moved off with their personal Bergens and sleeping rolls. The team of three from base camp camp carried the 4-man tent between them.

Unfortunately there were only four of us capable of controlled ski-ing with a load! The remainder soon split up into their groups and settled down to the long and

exhausting plod up the glacier. Those without skis wore snow shoes, which did help a little to counteract sinking into the deep snow. Burley and I forged on and we reached our farthest point of yesterday evening about mid-day. It had been hard work and we could see those on foot a long way down the glacier.

After a break for a quick brew-up, Corporal Todd and Marine Hickton caught up with us. [9] After a drink, we four pressed to the foot of the upper icefall. Here Todd and Hickton dumped their loads and returned on ski to the stores dump for another back-breaking carry. We could see the others approaching, all carrying very heavy loads to save a second trip. The party from base were of course only carrying loads for the camp and no personal gear. One team had built a sledge out of skis and all our stores were approaching the foot of the icefall by late afternoon. I hoped to have Camp II at the top of the upper icefall and in a position to launch the assault. But I had underestimated the distance and difficulty of travelling on foot.

Burley and I then attempted to find a route up to the 2,500 feet col. We had a difficult time finding our way up through the crevasses, and we could see the load carriers of the second party starting to climb in our tracks. They were obviously very tired and moving slowly. It was by now 1930 hours and everyone had been carrying loads of over 70-lb. for over 12 hours. The two of us had reached a point only 200 feet below the col when we were stopped by an enormous crevasse. All attempts to by-pass this failed, and it would have meant climbing the ice overhang on pitons. I decided to descend our hard-earned 1,000 feet and to establish our camp at the extreme head of the Henningsen and to try a direct approach to the mountain.

We retraced our steps and shouted to those below to go down. I am sure they were glad to do so. We reached the foot of the icefall and established Camp IA. The improvised sledge pullers were still a mile away and I skied down to meet them and found them to be still very cheerful in spite of their effort. Everyone eventually arrived and camp was fully established by 2130 hours.

It had been a long day and we had failed to reached our intended camp site. However, we had reached the foot of the upper icefall and were in a position to be able to set up our high camp the next day.

Day 3.—Monday, 12th December, was a bad day. We were very tired after our two days' flat-out effort and the weather looked threatening. The wind had swung from the south to the west and I had been told to watch for the formation of cirrus, which would herald a warm front coming in and bad weather.

As we had so little time I decided to press on and keep a careful eye on the weather. Six of us set off with only two 2-man tents in order to save weight. We went right from the camp this time and slowly worked our way up into the icefall. It began to snow, the wind blew harder, and dark stormclouds were racing up behind us. We pressed on through the crevasses, but our pace was slow as we had repeated difficulties every few yards. At mid-day the storm broke and we retreated down to the camp for safety. We reached it by mid-afternoon and with low spirits we set up our two 2-man tents and wearily crawled into our sleeping bags and slept until the evening.

Ironically the storm stopped about 1800, the wind dropped, and the sky cleared. If only we had been farther up the mountain we would have been delighted. The cloud base began to rise up the enormous cliffs, the setting sun radiating a deep red and engulfing the mountain in a deep pink hue. Our small green tents glowed in the strong rays of the setting sun, and suddenly the cloud cleared, revealing one of the

most beautiful sights I have ever seen. For the first time we saw our objective. Paget towered above us; its enormous snow and ice ridges were gleaming and the rounded top shimmered in the pink rays of the dying sun. It was magnificent, but very aloof and far away. We eagerly studied the lines of approach and mentally noted where the difficulties lay. It appeared quite straight-forward once one reached the shoulder at about 7,000 feet. The wonderful sight had completely cleared our depression and I knew then that tomorrow we must press on, whatever the weather was like, in order to get as high as possible, so as to have a chance of reaching the summit possibly on Wednesday.

The Assault

Day 4.—Tuesday, 13th December. Our alarm clocks were set for 5 a.m. and we awoke to find a cloudless sky and not a breath of wind.

Unfortunately, Marine Hickton's eyes had become very painful during the night and he was by now completely snowblind. Therefore we decided to press on with only the four fittest members, for ease of movement in two pairs, Burley and I in the lead, Corporal Todd and Marine Beck following. We took only the bare essentials to reduce weight and we decided to leave the tents behind and to use a snow hole if the weather deteriorated. The 2-man tents belonged to the ship's expedition gear and were a very poor substitute for mountain tents.

We got away at 7.30 and at the last moment Todd packed the Union flag as an afterthought. The mountain was perfectly clear and we all felt that it was today or never. Quickly we followed in our footsteps of the previous day and soon reached the large crevasse that blocked our route. We climbed up a steep ice wall and found ourselves in a labyrinth of crevasses, joined by narrow snow bridges. We took off our packs and belayed each other across, crawling carefully so as to distribute our weight as much as possible. Even so, one's hand frequently went through and we could see the dark depths dropping many, many yards below. We pulled our packs across after us, and eventually got out of the maze. Then we came to the largest crevasse of the day. It seemed that the icefall had defeated us. We split up, and Todd found a way across by an enormous jump through space. He worked his way along to above us and pulled the packs up the overhang, then we all joined him at the top. After only one more precarious snow bridge we reached the upper glacier which stretched unbroken to the foot of the south-west spur.

These precarious few hundred feet had taken over three hours to get through. But the glacier was now straight-forward and although occasionally we went up to our waists down hidden crevasses, we made good progress. The mountain grew closer and we were glad to climb in the shadow of the huge rock and ice face to our left. The weather was far too hot for comfort and we could hear avalanches crashing down and the noise of the seracs (ice pinnacles) collapsing on the icefall. The snow was very soft and it was plain that a thaw had set in. As we grew close to the foot of our spur we could see that we would have to cross the main avalanche track and make our way through the huge blocks that had fallen from the cliffs above. At about 1400 we reached a level platform and thankfully dumped our rucksacks and got the stoves going to make soup and tea.

I now had to decide whether to go on that day, perhaps failing to reach the summit and risking being caught out on the retreat, or to rest where we were and have a full day's climbing the next. Naturally a full day would be best, but we had to be ready to be picked up by the helicopters on Thursday morning. Secondly, the weather was too good and we felt it might break and our opportunity would be gone. So at 3 p.m.

we decided to go flat out for the top. We set off in our two pairs, myself in the lead, and it felt good to be climbing without our packs. We quickly crossed the avalanche track and climbed up the steep spur to its left. The climbing was not difficult—only steep and soft and occasionally one of us would go up to his waist in a crevasse, but we had become used to this by now and we no longer gave it another thought.

After nearly 2,000 feet we reached the top of the spur, where we had to traverse to the right across the top of the face. This was the only tricky bit of climbing. It was very exposed and the wind had made the snowface hard, while the thaw made the underneath soft and ideal for an avalanche. We safely crossed this more difficult section and climbed upwards towards the summit of the south-west spur. After what seemed ages, we eventually reached this at 5.20 p.m. Although it was still 2,000 feet above us, the summit seemed quite close and we were gradually rising above the surrounding peaks.

Corporal Todd now took over the task of kicking steps and we were all beginning to feel very tired—in fact every step was a great effort. But if we were to reach the summit and return before dark, we had to press on as fast as we could. We must have seemed to be crawling upwards to the people at Camp IA who, we learned later, were watching us through binoculars. Every step needed a determined effort, but gradually the top grew closer until we were only 500 feet below the summit. Marine Beck was extremely tired and I unfortunately had to ask him to remain where he was so that we could press on more quickly.

The summit seemed to be just as far away as ever, but gradually we moved up to the final shoulder. As we rounded it, Todd cursed. There to our right along a broad ridge was the true summit. We had been completely misled by the mountain being in cloud during our approach march, and from the head of the Henningsen Glacier the west peak had concealed it from our view. We could hardly believe it, as we staggered the remaining 200 feet to the west summit. But there was no mistaking the fact that about 600 yards away and a few hundred feet higher, there was another peak. The map was wrong in the difference of heights—it is definitely more than the 65 feet stated. We estimated it to be between 200 to 300 feet higher than the west peak, though no difficulties separate the two. Only a broad sagging ridge and the rise to the true summit. We reached the top of the west peak of Mount Paget at 1910 hours on Tuesday, 13th December, 1960.

We had been moving for nearly 12 hours since leaving Camp IA and had climbed 7,000 feet. We badly needed a rest and realized we were too late to go on. It was rapidly getting colder and a strong wind swept over the crest of the mountain. The sun was sinking into the sea and we knew that for us the true summit was beyond reach. Our disappointment declined, however, when we appreciated that we had got to the top of the west peak. No other expedition had got to within ten miles of the mountain and we had only taken four days to here. We planted the Union flag on a ski stick at the highest point and took the usual photographs. We carefully studied the ridge between the two summits, but could detect no further difficulty. The view was incredible, and all around us for as far as we could see, peaks rose up in all their splendour. Unfortunately, a layer of cloud lay over the whaling station of Grytviken, but we could see the north face of Paget sweeping down in a terrifying precipice and we were glad we didn't have to descend that way.

We left the top at 7.30 p.m. and were quite glad to do so as it had grown quite cold during our wait there. As we had not much time left before nightfall we had to hurry, and I came down last to safeguard the rope in case of a slip. We descended a

fast as we could safely go and luckily the snow reflected a great deal of light from the sky, thus preventing it getting really dark. We collected Marine Beck who was sheltering in an ice cave and hurried down the hard, windswept surface to the top of the west spur. Then, carefully across the steep traverse, we half slid down the last 2,000 feet to where we had left our rucksacks. It had taken us just over three hours to descend. Although we were very tired, two of us immediately started digging a snow pit for us all to sleep in while the other two got the stoves going and the meal on.

We were incredibly parched and burned by the hot sun and all of us suffered from badly split and blistered lips. But this was all forgotten as we lay in our sleeping bags. Above us we could see the spur towering up into the stars. Far below we could see the lights of Camp IA flickering and we felt glad we had at least reached the west summit and justified the effort everyone had made to establish the advanced base. It was surprisingly warm out of the wind in our snow trench and soon we were all very fast asleep.

The Withdrawal

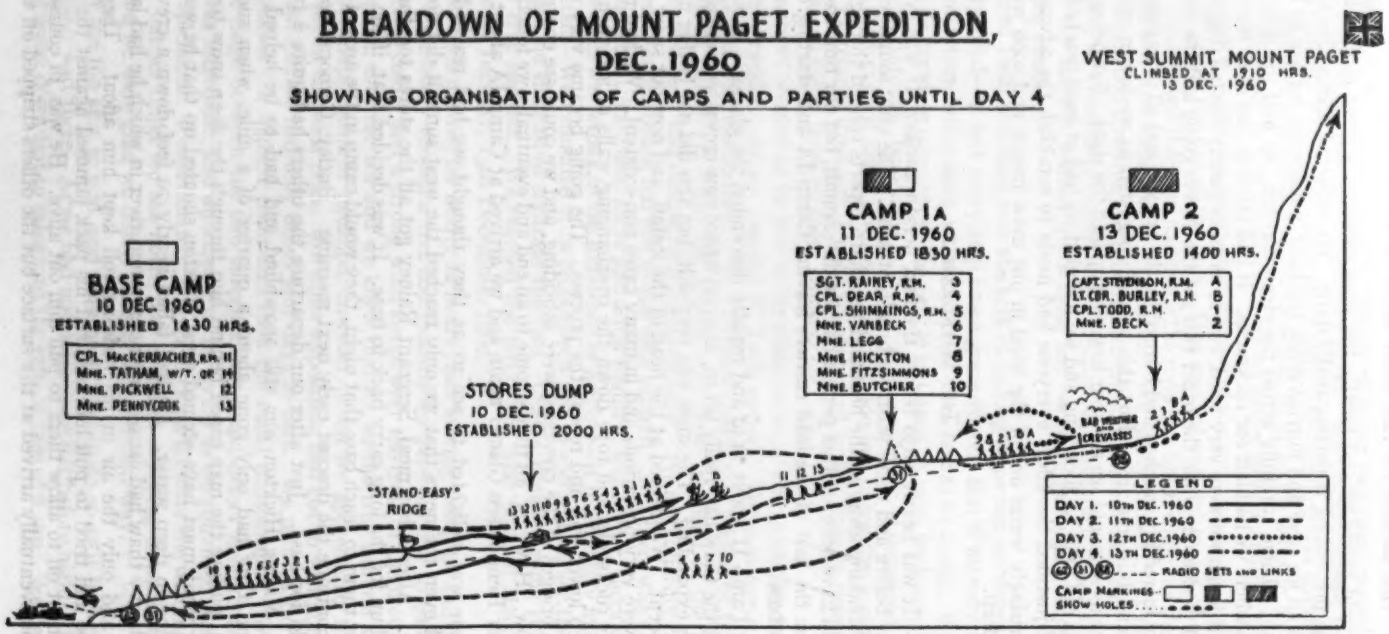
Day 5.—It was nearly 1030 before the first person awoke. It was even hotter than the day before and there wasn't a breath of wind. The only sound was that of avalanches breaking away in the heat and the sharp reports echoed through the still air. It would have been another perfect day for the summit, but our time had run out. We could see the first of the load carriers leaving Camp IA and starting off on the long trail to base.

We left Camp II about 1130 and rapidly descended the glacier. It was plainly evident that the thaw had really set in, as everywhere new crevasses were opening up and old ones expanding. The snow was very soft, but this did not bother us as much as on the ascent. We arrived at the head of the icefall, and now our snow bridges of the ascent were very precarious and in many cases non-existent. We had repeatedly to lower our rucksacks and rope down the overhanging walls of ice, then climb up the less steep lower wall and repeat the process. The going became very dangerous as the large bridges in the crevasses were subsiding, and we could see enormous dark caverns below. However, all things come to an end and eventually we found ourselves on the flatter Henningsen Glacier again and we arrived at Camp IA about 2 p.m.

Everyone was delighted to see us as they thought we had reached the true summit and even the news that we only reached the west summit did not dampen their spirits. After a hot meal, Sergeant Rainey got all the stores together and his team loaded up for the long carry back to base. It was decided that, if the going was too tiring for them to reach base that night, they would camp in the area of the stores dump and continue the descent early next morning. Burley, Corporal Todd, and I set off on ski for base. Just after our departure the others had quite a frightening experience. Marine Hickton was still snowblind and had to be helped over any obstacles and they had only gone about a quarter of a mile, when suddenly he disappeared, pulling the man roped behind him through the deep snow towards the hole. After what must have seemed ages, Hickton shouted up that he was unhurt, but swimming in deep water. He had fallen nearly 70 feet down a crevasse, but luckily the heavy thaw had caused an underground river in which he had landed and submerged and only the air in his bedding roll kept him afloat. They lowered another rope and tried to pull him out, but his pack jammed against the walls and he had to cut it off to allow them to pull him out alive. He was, of course, freezing cold when he eventually arrived at the surface but the others stripped off their warm

BREAKDOWN OF MOUNT PAGET EXPEDITION, DEC. 1960

SHOWING ORGANISATION OF CAMPS AND PARTIES UNTIL DAY 4



clothing and he soon thawed out. The incredible thing was that the shock had completely cured his snowblindness and his sight reverted to normal!

Unaware of the drama, the three of us skied on down the glacier, past the stores dump, and down to ' stand easy ' ridge. It was by now 8 p.m. and we had to hurry through the final difficulties to try to reach base before nightfall. Throughout the descent we had noticed with amazement the alteration in the surface of the glacier due to the thaw. The last icefall had become quite dangerous and we didn't get back to camp until after 11 p.m. Another day of 12 hours exhausting work and we were completely all in. The party that had left Camp IA, when we were still at Camp II, had only just arrived before us, having great difficulty with the deep snow and crevasses on foot.

Sergeant Rainey's party had a hard descent and they camped in the area of the stores dump. They too had a comfortable night, even though Marine Hickton had no sleeping bag. However, he borrowed all the spare clothing he could and slept between the others, none the worse for his experience.

Evacuation

Day 6.—Final morning. Thursday, 15th December. On the previous evening, on our way back to base, we had noticed from ' stand easy ' ridge that the thaw had caused the gully between the icefall and the rock face to dry out and it was now just a steep gully of broken rocks. We decided to climb it and see if it provided an easy way down to the beach for Sergeant Rainey's party, thereby saving them the difficulties and an unnecessary two hours travel over the first icefall. Before setting off we left a message for the ship, telling them that all base camp stores could be evacuated immediately and that it was hoped the rest of the party and stores could be lifted from the beach by the snout of the Henningsen Glacier.

Burley and I then set off to find a way along the beach. We traversed over the base of the first icefall and worked our way down to the beach, on which hundreds of seals were basking. We were picking our way through them when we heard the broadcast of H.M.S. *Protector* echoing through the sea mist. Then we saw her quite close inshore, steaming up and down waiting for us. We hurried through the countless number of seals and climbed up the steep gully beside the snout of the glacier. It was very imposing looking under the slowly moving ice and we hoped no seracs would choose to collapse on top of us. We easily climbed the steep gully and came out on the top of the icefall. About a mile away we saw the final stores party slowly making its way along the old route. We hurried on and attracted their attention towards the head of the gully. The helicopters were now busily evacuating the base camp stores and by the time we had reached the bottom of the icefall it was our turn to be lifted from the beach to the ship.

Conclusion

The outstanding thing to my mind is the fact that only two members of the expedition had had previous experience of snow climbing—Corporal Todd and myself. The way in which the remainder of the team tackled the first icefall and subsequent terrain is proof of the versatility of the Royal Marines. Everyone did more than was asked of them and all showed great keenness and ' guts ' in what was, without a doubt, a hard effort to establish Camp IA. The difficulty of the local terrain can be judged from the fact that it was completely unsurveyed in an otherwise adequately surveyed island.

With the exception of Shackleton, who after his epic boat journey from Elephant Island had crossed the island from this coast through the easiest pass a good deal farther to the north-west, we were the only party ever to have penetrated inland from the south coast. The general terrain can be judged by the fact that one of the attempts on Mount Paget had been carried out by a party whose main object was to climb the mountain. They spent nearly a year in the island, yet failed to get within ten miles of a feasible route up the mountain.

Looking back, it is easy to see our mistakes. If only we hadn't tried the assault on Tuesday, 13th, but waited until we were fresh the next morning. But the weather might have changed and all would have been lost. Also, this would have meant the ship waiting another day, and we had been told to be ready for re-embarkation on the morning of Thursday the 15th, and obviously we had to comply with this. We were exceptionally lucky with the weather, but with the short time available we had to be, and we used it to our best advantage. Finally, we found a feasible route to the true summit. It is now certain that there are no further difficulties along the connecting ridge and we can safely say that, given time and the weather, the mountain can be climbed.

This, I think, was our greatest achievement!

The following are the members of the Detachment who took part in this expedition:—

Captain V. N. Stevenson, R.M.
Lieut.-Commander (S) M. K. Burley, R.N., F.R.G.S.
Ply/x 5346 Sergeant M. Rainey
RM 15134 Corporal R. Todd
RM 18936 Corporal D. McKerracher
RM 13522 Corporal (K) J. Shimmings
RM 15461 Corporal T. W. Dear
RM 15279 Marine D. Beck
RM 6958 Marine D. A. Legg
RM 11832 Marine K. F. Butcher
RM 15918 Marine (S) M. J. Tatham
RM 15960 Marine Fitzsimmons
RM 15496 Marine M. J. Hickton
RM 18634 Marine W. Pickwell
RM 18583 Marine I. G. Pennycook
RM 18638 Marine N. R. Vanbeck

SOLDIERING IN HELICOPTERS

By Major B. I. S. Gourlay, O.B.E., M.C., Royal Marines

"THERE they are! Dead ahead!" Over the intercom the voice of the Squadron Commander in the pilot's seat beside me broke into my reverie. I acknowledged his remarks with a nod. Leaning forward to peer through the cockpit perspex, I caught a glimpse of the scattered Commando vehicles lying under their camouflage nets among the sand dunes. I sat back, pleased to have made our rendezvous successfully, and on time, too. I was beginning to enjoy myself. What fun it was, this soldiering in helicopters, and what a host of exciting possibilities lay ahead.

Early that morning I had left the deck of H.M.S. *Bulwark*, our floating base now some 30 miles away, and set off in command of a 2-wave force of helicopter-borne Royal Marine Commandos numbering about 120 men. Our exercise role was to act as a brigade reserve and we were to be committed in support of a Commando already operating in the desert.

Our course took us over the monotonous Tripolitanian desert. The steady roar of the engine, the rhythmic whirr of the main rotor and the warmth of the cockpit lulled me into drowsy contemplation of the scene spread out 500 feet below. Here history had been made. Over this ground, Rommel had once manœuvred his forces in defence of distant Tripoli. I glanced over my shoulder at the accompanying helicopters and wondered idly what use that great general would have made of Commando squadrons such as this. With his flair for the mobile battle, he surely would have revelled in the use of them. Not for him the timid plan or stereotyped approach. "It is my experience," he once wrote,[1] "that bold decisions give the best promise of success." I pictured him employing helicopter forces rather like his armour, in far-reaching moves to unexpected places, reaping full advantage of their speed and surprise potential.

Was not that the way for us? I fell to reviewing our experiences since we had first started working with helicopters. What were the lessons we had learned so far? Could we now compile a list of do's and don'ts? Certainly there was no handy pamphlet on the subject. Perhaps our guesses would be as good as most. Thus ran my thoughts and I settled down to think the answers out.

The Commando Carrier

The reader must know that our resources are modest and our experience not yet a year old. This is no story of scores of medium helicopters operating from several carriers on the scale usually associated with the United States Marine Corps. Rather we are concerned with the early experiences of a single Commando unit in Whirlwind helicopters operating from Britain's first Commando carrier. This ship, formerly a fixed-wing aircraft carrier, carries 16 helicopters and 600 Royal Marine Commandos. She has been specially fitted with storerooms, offices, and messdecks to meet the requirements of the air squadron and the unit, and is capable of supporting operations ashore for several weeks. Extensive air conditioning has been installed for service east of Suez. The full scale of Commando transport can be carried on board. Four of the latest type of landing craft (L.C.A.), capable of lifting a ¼-ton truck and trailer or 35 men, are carried at special gantries aft.

[1] *The Rommel Papers*, edited by B. H. Liddell Hart. (Collins), p. 201.

The helicopter in current use is the Westland Whirlwind, a copy of an American machine, but powered by the British Alvis Leonides engine. It can carry up to six men and has a cruising speed of 75 knots. As it is unable to lift the standard Army Landrover, 30 helicopter-portable Citroen trucks are carried on board to provide the Commando with some mobility ashore when the heavier transport cannot be landed over beaches or hards. When the more powerful Westland Wessex, with a payload in the neighbourhood of 4,000 lb., is brought into service, the Citroens will become redundant.

The 600 Commandos, forming a unit roughly equivalent to a light infantry battalion, are split into seven troops. Of these, one comprises control and administrative elements, and one the supporting weapons (mortars, machine-guns, anti-tank guns) and the assault engineers. The remaining five troops, each 60 strong, are designated 'rifle troops' and provide the assault infantry. They include a high proportion of officers and non-commissioned officers, affording strong leadership at every level. The Commando also has under command a naval gunfire forward observer party, and can draw on the services of an air control team borne in the ship for the direction of naval and R.A.F. aircraft.

From this brief description of the Commando carrier, it will be noted that the landing force, though enjoying great strategic shipborne mobility and some tactical flexibility by reason of its helicopter lift, suffers from two weaknesses. In the first place it lacks tanks; in these days, when even minor Powers boast their own armoured forces, this could prove an embarrassing deficiency. Secondly, it lacks artillery. It can therefore be deduced that the Commando carrier is unlikely to be of much value in a shooting war unless its Commandos receive early assistance of supporting arms on landing. This scarcely brooks argument. On the other hand, it has never been envisaged that the Commandos should grapple with armoured forces without the support of at least a strike carrier, whose aircraft, as demonstrated at Port Said in 1956, can provide an effective answer to tanks and also an impressive substitute for artillery.

Whilst the support of tanks and artillery will be very desirable sooner or later, it is possible that the surprise approach of the Commandos in their 28-knot ship, followed by swift, unexpected helicopter landings at vital places, will enable objectives to be seized so quickly as to offset the lack of supporting arms in the early stages. Be that as it may, the Commando carrier, when acting on its own, will be at its most effective where its infantry is required in a hurry to deal with opposition which is light.

The Role of the Helicopter

It remains now to consider how that infantry should be introduced into battle. What principles are to be followed in landing soldiers by helicopter? How best are helicopters employed when operating tactically ashore? What changes will they induce in conventional infantry tactics?

These and other questions spring quickly to mind on first consideration. But let it be said at once that the arrival of the helicopter on the battlefield in no way alters military tactical principles. The helicopter merely provides a means of conveying men to battle. We do not yet fight from helicopters; we fight on the ground. General Shoupe, addressing senior officers of the United States Marine Corps shortly after he had been appointed to the post of Commandant, put it succinctly enough. "Don't overlook the fact," he said, "that no battle was ever won by Marines in a

boat, amphibian tractor, helicopter, ship, or transport aircraft. Battles are won by Marines with their feet on the ground."

We must be careful not to be so carried away with the obvious attractions of the helicopter that we lose sight of cold facts. Once the individual Commando is landed, he is in the same position as any other infantryman. The helicopter cannot give him power of manœuvre on the ground; what it can do is to take him, together with his support weapons, to a favourable tactical position in a space of time impossible to achieve on foot or in vehicles. From this position he can deploy in accordance with normally accepted methods, so as to close with the enemy.

However, a glance at the *Bulwark's* aircraft resources shows that only a limited number of Commandos can be lifted at one time. Assuming 100 per cent. serviceability, by no means always attainable, the 16 helicopters available can be expected to lift 80 men. That is to say, a troop group, no more. This does not mean that a mass move of the unit cannot be undertaken, troop by troop, but it takes time and may not be practicable in the face of the enemy.

These considerations seem to indicate that the ground battle must continue to be fought on conventional lines, with the difference that the unit commander in contact with the enemy will now be able to exert a powerful influence on events by concentrating his helicopters for the speedy move of a striking force to places of decisive importance on the battlefield. The ability to move a group in this way is a considerable asset, but it has to be remembered that a maximum lift can only be achieved, when aircraft are limited, at the expense of other important missions which the helicopter is likely to be called upon to carry out, such as reconnaissance, casualty evacuation, and resupply.

Command and Control

In the ship-to-shore helicopter assault, the command arrangements are not unlike those of the amphibious assault. The unit commander remains on board in close consultation with the carrier's captain until the emphasis of the battle shifts to the shore. The helicopters remain under the command of the captain at all times but, as their role in the land battle is to further the military aim, they come under the operational control of the unit commander when they are required for tactical operations inland. If a brigade or higher military commander is present, the helicopters are placed under his control so that the best use can be made of them. This is important, as there will never be enough helicopters for all the tasks which require to be done, and a correct priority of tasks can only be laid down by centralizing control at the highest level.

It is essential that at whatever level this is, the aircraft are not misused. Much time in a helicopter's life is spent on maintenance; in the case of the Whirlwind there may be as many as three hours' servicing to every hour's flying. It follows that when helicopters are available, the military force commander must be careful to employ them only on tasks which take full advantage of their capabilities, and not on those which can be undertaken by other agencies. There is no objection in principle to his allotting helicopters simultaneously to a wide variety of tasks. But if he does so, and subsequently requires them for a decisive thrust, he will have to draw them away from their current tasks and, owing to their dispersion and possible refuelling needs, may find that they are not available to him in time. It is therefore advisable for him to avoid spreading his helicopter effort too widely, and even to keep an uncommitted reserve of aircraft immediately to hand whenever there is a likelihood of his requiring a maximum helicopter lift at short notice.

The busy military force commander cannot hope to ' keep tabs ' on the whereabouts of all his aircraft and on the state of their serviceability, nor can he be expected to be an expert on their technical capabilities. Two naval aviators are therefore required to keep him informed on these matters. One, the helicopter liaison officer, stays with him in his tactical headquarters at all times; the other, the helicopter control officer, positions himself at the helicopter base ashore, or at the main landing site, and keeps in wireless touch with the helicopter liaison officer and with the carrier.

Where practicable, it is usually best to base aircraft in the carrier as opposed to on shore, for pilots can obtain proper rest on board and helicopters can get better servicing. This arrangement, which is usually adopted when the distance between ship and ground troops is in the order of 15 miles or less, suits the military best, for once aircraft set up a base ashore, infantry have to be found to afford them protection. Where the distance is greater than 15 miles, there is a danger that the helicopters will be too far away to give rapid support to the ground troops when called for. Sometimes a satisfactory compromise is possible. This involves the establishment during daylight hours of a temporary aircraft park at the military headquarters ashore or in the B echelon area, from where the helicopters depart for the ship at nightfall.

The military force commander conducts the battle from his own headquarters. While much good may come of his leaving it for personal reconnaissance from the air, he should not stay airborne for longer than is strictly necessary to achieve his purpose, especially when aircraft resources are limited. At first sight it might seem unimaginative for him not to use a helicopter extensively as an observation post from which to read and fight the battle. But at the height at which he must fly for safety in the presence of the enemy, the lie of the land and the movement of infantrymen in action are difficult to assess; sizeable hillocks, which can provide good cover from fire for a platoon of men or more, often look quite flat from the air. It is wiser, at least while helicopter-borne troops form only a small part of the military force, for the commander to control his unit from his headquarters on the ground where all his best communications are centred. If it is essential that he sees the battle at closer quarters, he will obtain the most accurate picture of events from a forward observation post on the ground.

Communications

For the efficient command and control of operations supported by the carrier, special communications are needed. There are two out-of-the-ordinary requirements which have to be met. The first is that a link must be maintained with the carrier which may be manœuvring many miles offshore: the Commando is furnished with a powerful high frequency set for this purpose. It is too heavy to be manpacked and must, therefore, be moved forward by helicopter or vehicle. The second requirement is for a means of communicating with helicopters in the air. The helicopter liaison and control officers can best do this by means of ultra high frequency sets. But troops on the ground will also need to communicate with the helicopters. As the current very high frequency infantry sets do not provide the necessary range for helicopter operations, the Commando command net is equipped with high frequency sets which can work to equivalent type sets carried additionally in the helicopters. Pilots switch from ultra high to high frequency as a result of orders received before take-off, or at short notice when airborne if ordered by the helicopter liaison or control officers.

To complete the wireless links required for helicopter control, sets are furnished for intercommunication between the helicopter liaison officer, the helicopter control officer, and the carrier. All the many sets referred to above require batteries, which

are heavy, and this raises problems of porterage and re-charging. While the Commando is equipped to do its own charging in the field, the work load is usually excessive and batteries have to be flown back to the carrier for attention.

The Assault Landing

The first requirement in any assault landing, assuming that local air superiority has been achieved, is to find the initial landing site selected from maps and air photographs. Ideally this should be marked before the assault starts by a reconnaissance team, introduced into the area by sea or from the air. If the enemy situation allows of this, pilots will normally have little difficulty in locating the site which will be marked by various navigational aids.

It is when a reconnaissance team cannot be sent ahead that difficulties arise and risks may have to be taken. Areas heavily defended by the enemy present the greatest problem. The landing site and its surroundings must be subjected to effective preparatory fire by naval guns and from the air. The leading helicopters must approach on a route which does not interfere with the supporting fire programme; contour flying over ground which affords good cover will often be preferable to a high approach. In order to provide last-minute suppressive fire before the first aircraft touch down, it is desirable for helicopters fitted with machine-guns and, if appropriate, anti-tank weapons, to precede them. As these armed helicopters pass over the site, they can move forward and to the flanks to engage opportunity targets with covering fire while the infantry deplane.

Should it happen that an assault on a defended area has to be made from the carrier when guns and air support cannot be provided in time, the helicopter-borne force will be obliged to land well clear of known enemy positions if it is to survive. Even then, it is hardly likely to be known for sure that the selected landing site is entirely free of enemy, and steps must be taken to guard against losing the whole of the first wave in the event of unexpected opposition. These may include the flying of air reconnaissance and subsequently the introduction of a very small pathfinder force, even a single helicopter team or stick, to make sure that the immediate surroundings of the site are free of the enemy. If serious opposition is met by the pathfinders, the follow-up helicopters must be warned to divert to a previously planned alternative landing site, and the process of wary approach must be repeated.

The most vulnerable moment of the landing is when the leading helicopters touch down. The helicopter-borne troops must therefore be a balanced force on arrival. As the build-up proceeds, this balance must be maintained. This means that at all times an adequate proportion of infantry must be present; they must possess high fire power, machine-guns, and anti-tank weapons, and must have the assistance of gun and air support too.

Wave and Stream Operating

The commander of the first wave of troops to be landed sits alongside the helicopter wave leader. In this way he obtains an excellent preview of the ground over which he will be operating. He can discuss and agree with the pilot exactly where the helicopters should touch down and in what formation. This is important, for he will wish to place his men on the ground from the outset in such a way that they have to do the minimum of regrouping. The ideal is that when he steps out of his aircraft, his men are already in positions which allow him to proceed at once with his immediate task, namely, the destruction of the enemy in the area of the landing site.

Much time is saved if pilots and troops are trained together beforehand in various standard landing patterns which can be adapted to suit the size and nature of the landing sites in use. In close or mountainous country, however, it may not be possible, owing to scarcity and restriction of landing sites, to put down more than one helicopter at a time. In this case, troops will be landed by helicopters working in stream, a process which leads to a comparatively slow build-up. But if the site is large enough to accept several aircraft at a time, stream landing increases the speed of build-up as it cuts out delays on board caused by the need to organize and form up waves. These delays are aggravated if, as in the *Bulwark*, transport carried on the flight deck reduces deck operating space.

It is not only the landing sites which determine whether wave or stream methods are adopted. Flying conditions at sea have also a bearing and need to be considered. Ideally the ship should remain at anchor close inshore, but if general atmospheric and wind conditions are such that an uneconomical payload results, the carrier will need to keep under way so as to induce sufficient wind speed over the deck. The effect of this is that, as flying continues, the distance between the ship and the landing site inevitably increases. Eventually it becomes such that the extra fuel required by the helicopters cancels out the payload gained by the carrier remaining under way, and the ship must turn and close the shore again. During this closing period, the light wind over the deck will force aircraft, previously in stream, to form waves, either in the air while waiting to land or on the deck waiting for sufficient wind to take off. Under these conditions it is therefore preferable to steam the ship in a planned race-course pattern, and to work the aircraft in waves, landing on and taking off during the period the ship is into wind.

Deplaning

The way in which troops deplane is determined by the type of terrain. Men may have to jump from a hovering helicopter if the ground is too rough or the slope too great for a normal wheels-on-the-ground exit. Descent by rope may be necessary in bushy or really rough country, while a roller landing technique, pioneered by the French, may have to be adopted when certain atmospheric conditions obtain. At altitude and in high temperatures, it may be impossible for the helicopter to hover, and a running or rolling landing is contrived in much the same way as that made by a fixed-wing aircraft. Troops deplane at about one-yard intervals as the helicopter moves forward along the ground at a low speed. This requires training on the part of pilots and troops, and there is a need for a despatcher whose task is to assist the troops and keep the pilot informed of the progress being made.

As soon as men have landed they will need to know where they are on the ground and in what direction they have to move off. Neither of these things will be immediately apparent to them, for their sense of direction is almost certain to be confused at the moment of landing. The view through the side door of a helicopter is restricted and, during contour flying especially, it can be most misleading. Troops may be put down facing in any direction, for the helicopter's final approach is governed not only by the position of the enemy but by the shape and nature of the landing site and the wind direction. Even if men are put down facing the right way, it is difficult for them to find their bearings quickly after scrambling out of a noisy helicopter at top speed, enveloped as they often are in billowing clouds of dust or sand, and carrying weapons and loads of all sorts.

The pilot is in far the best position to know where he is, and, by reference to his aircraft compass, can tell in which direction the enemy lies. He has the responsibility

then, on landing his troops, of indicating to them visually their line of advance. He does this simply by leaning out of the cockpit and pointing. The troop commander, having travelled in the front seat alongside the wave leader, will also have a very good idea of his whereabouts, and he too can subsequently point out the correct direction to his men. A final check can be made by section commanders, who will take a quick glance at their pocket compasses at the first opportunity. These measures to establish position and direction appear simple, but require practice; the French, who have years of experience of helicopter-borne troop landings, still cite bad cases of loss of direction leading on to abortive operations.

Night Landings

The successful conduct of night landings by helicopters rests largely on the establishment of navigational aids at the chosen landing site; these may be electronic but need not necessarily be so. Simple visual methods, such as a lighted 'T' formed by portable ground lights or by men holding torches, can prove very effective. When there is a bright moon and the site and its surroundings are distinguishable from the air, aids may be dispensed with initially. Once aids are set up, there is little difficulty in proceeding with helicopter landings as by day, although the tempo must necessarily be slower owing to the need for caution on the part of the pilots.

The site must be entirely free of obstacles and very carefully selected to allow an unobstructed flight path in and out. It is advisable for a pilot to confirm its suitability by daylight ground reconnaissance before it is used at night. Special attention has to be paid to night emplaning and deplaning drills, and an organization is required to control aircraft movement into and out of the landing site. The organization, which is called the Landing Zone Control Team, carries out the same functions by day, but after dark extra emphasis is laid on the need to prevent congestion of men and stores on the ground so as to reduce the risk of accidents. Troops must be trained to move off the landing site in the darkness without any noise, and to avoid collecting anywhere along the flight path of incoming or outgoing helicopters.

Logistic Supply

In the ship-to-shore assault from the Commando carrier, all helicopters will be used initially to convey inland the fighting men and their immediate requirements of supporting weapons and vehicles. After that, their chief task will be to support tactical operations in the field. As the battle progresses, it will be necessary, sooner or later, to bring ashore the long-term maintenance and build-up stores. It may be possible to take these in by L.C.A. if there is time and suitable beaches exist close to the operational area; this is very desirable where large amounts of stores have to be lifted and when helicopters are required for more important tasks elsewhere. But the use of L.C.A.s involves the setting up of a beach organization, double handling of stores on the beach, the provision of working parties at the dumps, and vehicles for ferrying loads forward.

As helicopters used for logistic tasks can dispense with beachheads and can deliver stores direct to the consumer, there will always be a demand for their services in this role, even though their payload is small compared with that of a boat or vehicle. While the battle progresses, therefore, operational and administrative calls for support must be carefully weighed up so that a correct balance is kept in the allocation of available aircraft to tasks.

It is normal to preplan the logistic build-up in terms of tonnages required daily. If unforeseen requirements arise, a quick signal can be sent demanding the items concerned; an aircraft is allotted for the task by the air staff on board, and a change is made in the landing table serials. A daily routine conference is held in the carrier, usually in the afternoon, at which ship, squadron, and Commando representatives discuss the administrative arrangements for the next day.

Stores come ashore loaded in the helicopter cabin or, in the case of robust items, in underslung nets. When they reach the landing site, the helicopters are marshalled into their landing points by Marines from the Landing Zone Control Team. The marshalling drills for directing a helicopter to a particular spot and for the unhooking of underslung loads, need a lot of practice; troops get rusty very quickly. Equally important is the need for all men ashore to know the hooking-on procedure in case stores have to be returned to the carrier or moved to a new location ashore. Stores are laid out on the ground by commodities in small dumps of limited overall height, and aircraft are directed to put down as close to them as possible. They are picked up in the order laid down by the landing zone control officer working through the helicopter control officer. In default of any such orders, pilots are briefed to pick up first the load farthest to their right as they fly in to the site.

Muddle sometimes occurs when mixed stores carried by a single aircraft have to be delivered to sub-units in different locations. This happens particularly when there is no time to brief pilots or recipients on the exact time of delivery and the nature and quantity of stores being delivered. Troops seeing a load-carrying helicopter at their landing site are prone to assume that all stores in it are for them, and unload the lot accordingly. Something must be done to prevent this happening. The most satisfactory method so far devised is to record the contents and the amounts due to each consignee on a plastic board attached to the outside of the helicopter door frame. These details are inserted in wax pencil before take-off by the appropriate administrative staffs, and those unloading stores ashore refer to them before starting work. Careful check is made on board to record the despatch of stores and it is thus possible to establish at any time exactly what has gone ashore, where it has been sent, and what other items have yet to go ashore.

As far as vehicles are concerned, there will always be a need for a few ashore early. Even if the terrain is unsuitable for their extensive use, a small number of light trucks in the area of the main landing site can be useful for moving unwieldy stores to and from dumps, and for running local liaison trips. The small Citroen can be lifted quickly into and out of the landing site by the Whirlwind to meet these requirements, and provides a stop-gap until the arrival of heavier vehicles landed over beaches and hards.

Conclusion

No account of this length can cover adequately the detailed experience of operating from the Commando carrier which has come from months of close co-operation between the ship, Commando, and squadron. It has only been possible to touch on some of the practical problems of working with helicopters in the field, and no reference has been made to the tactical use of these aircraft in the various phases of war. Nothing has been said of the assault organization in the ship, the many problems facing the carrier's captain and his officers, or the lessons learned in air matters by the helicopter squadron. But to carry out efficiently an assault landing, followed by protracted operations ashore supported from the carrier and involving

the tactical use of helicopters, the military must have a clear idea of the main operating difficulties facing the other members of the Commando carrier team.

It is not enough merely to be able to step into and out of a helicopter as passengers, in the same way that, for effective co-operation between infantry and armour, it is not enough for the foot soldier merely to be able to ride on a tank. Time is needed for the development of knowledge and mutual confidence, and for practice; it is practice which really counts in helicopter operations. Numerous exercises from the Commando carrier have been carried out in desert and jungle, mountain and plain, at altitude and at sea level, in high temperatures and in cold. Much has yet to be done, much to be learned. New ideas are coming forward, being tried out, reshaped, and tried again. A doctrine is emerging from all this experiment and experience. We must see that it is not cramped by unimaginative thinking, and that at least some of it bears the Rommel touch.

* * *

"There they are! Dead ahead!" Over the intercom the voice of the Squadron Commander in the pilot's seat beside me broke into my reverie. I acknowledged his remarks with a nod. Leaning forward to peer through the cockpit perspex, I caught a glimpse of the scattered Commando vehicles lying under their camouflage nets among the sand dunes. I sat back, pleased to have made our rendezvous successfully, and on time, too. I was beginning to enjoy myself. What fun it was, this soldiering in helicopters, and what a host of exciting possibilities lay ahead!

UNITED STATES AMPHIBIOUS WARFARE CAPABILITY

By Lieut.-Colonel John L. Tobin, United States Marine Corps

CAPTAIN LIDDELL HART'S article, " The Value of Amphibious Flexibility and Forces," appearing in the November, 1960, issue of the JOURNAL, masterfully identifies the strategic necessity for the maintaining of an amphibious capability by the Atlantic Alliance.

His illustration of the great influence that the allied amphibious forces had on the outcome of the conflict in all theatres of operation in World War II needs no amplification. And his conviction that the advent of the atomic age has created a greater demand for adequate amphibious forces is equally well documented.

The threat of the outbreak of a global war involving the use of thermo-nuclear weapons is effectively deterred by adequate forces designed to accomplish this purpose. However, under the umbrella of an East/West nuclear stalemate, another type of warfare is being waged. The Communist bloc has taken the initiative in this type of warfare. To realize their continually avowed aim of a Red-controlled world, the Communists, in addition to their unceasing world-wide political and economic campaigns, are using the instrument of the limited war to bring about the piecemeal destruction of the West's ability to resist. Since the end of World War II there have been numerous aggressions in which the Communists have been involved. To forestall communist aspirations in the waging of limited wars, it is mandatory that the West maintain forces in readiness of the proper size and composition to deter and fight all types of limited conflicts. And these forces must be capable of exploiting both air and sea lift.

The U.S. Army's STRAC force and Great Britain's Parachute Brigade, designed to capitalize on the speed of movement inherent in air lift, are among those available. The existence of these forces is essential. When movement by air is feasible they can satisfy many limited war requirements. However, as Liddell Hart points out, movement by air does have its limitations. Among these limitations are: the problem of obtaining over-flight rights; the lack of aircraft-handling facilities along circuitous air routes; the restrictions on supporting an airborne force with vehicles, heavy weapons, and supplies; and the great monetary cost of strategic air movement.

These limitations indicate the requirement for amphibious forces capable of taking into account the maritime nature of the free world alliances in both the eastern and western hemispheres, thus ensuring the ability of being able to cope with a wider spectrum of limited aggression. The prime importance of the maritime nature of these alliances is evidenced by the fact that communist expansionist activities are more readily checked in areas accessible to the sea, as for example in the cases of Greece and Korea.

It is not the intention of this article unduly to belabour the relative advantages and disadvantages of air and sea mobility. They are complementary. The availability of sea and airborne forces in appropriate balance is a matter of grave importance. Both are necessary if the West is to have an effective global strategy. However, the tenor of this article (not surprisingly) will subscribe to Captain Liddell Hart's principal conclusion, " amphibious flexibility is the greatest strategic asset that a sea-based Power possesses."

In keeping with this conclusion he advocates the creation by Great Britain of "an elite specialist amphibious force of all arms and services" to be employed as 'lockopeners' in future operations. As the prototype of this force he most graciously nominates the United States Marine Corps; "a self-contained and sea-based force . . . the best kind of fire extinguisher because of its flexibility, reliability, logistic simplicity, and relative economy." In the extension of these conclusions it is the purpose of this article to describe the United States amphibious warfare organization and the doctrine that governs its employment.

The Constitution of the United States assigns to the Congress the power to raise and maintain the nation's armed services. In recognition of the flexibility of amphibious forces, the Congress has enacted legislation which directs that the primary responsibility for amphibious warfare be divided between the two sister naval services, the U.S. Navy and the U.S. Marine Corps. This same legislation further directs that the Marine Corps shall consist of no less than three combat divisions, three aircraft wings, and the necessary supporting troops. And it sets a peacetime ceiling on the size of the Marine Corps at 400,000 men.

This legislation is significant and unique in two important aspects. First, it protects the existence of the only force of combined arms including its own combat aviation that is available among the armed forces of the nations of the world. Secondly, it recognizes the necessity to assign primary responsibility for the perpetuation and continued development of a highly specialized military technique (in this case landing force operations in amphibious war) to a force whose entire energies are devoted to that end. The alternative is the acceptance of the concept of 'general purpose forces' to perform multiple functions. The ability to perform specialist operations must suffer under this concept due to the assignment of funds, time, personnel, and equipment to higher priority tasks (e.g. the ability to wage war on a large scale on a continental land mass).

A recent historical example of the tremendous importance of highly trained specialists is the work performed in the 1930s by a small band of U.S. Navy/Marine Corps professional amphibians who kept hammering away at solving the problems of modern amphibious warfare. By 1941 they had developed, in the face of almost universal indifference, the amphibious techniques, and specialized ships and equipment, which proved to be one of the most decisive factors governing the outcome of World War II.

The U.S. Marines, unlike the Royal Marines, are a separate service. The Commandant of the Marine Corps determines the Corps requirements and prepares an individual budget request for submission to the Congress. Upon the granting of the funds, he administers the expenditure of separate Marine Corps appropriations which amount to about 1,000,000,000 dollars (about £350,000,000) per year. This sum is approximately 1/40th of the total defence budget.

The closeness of the integration of the Navy/Marine Corps amphibious warfare team is reflected in the Chief of Naval Operations' (First Sea Lord) budget submission to the Congress, in which he requests funds for the amphibious ships which provide mobility for Marine landing forces and for Marine Corps aircraft and aviation ordnance. And, among other things, the Bureaus of the naval supporting establishment provide the Marine Corps with clergymen, doctors, dentists, and medical aid men.

The Marine Corps' present strength is 175,000 officers and men. It is " an elite specialist amphibious force of all arms and services " composed entirely of volunteers. The asset that it considers most important is an intangible one—*esprit de corps*.

The employment of amphibious task forces is a manifestation of naval power represented by balanced fleets. Their employment is integrated with the operations of carrier striking forces, submarine hunter/killer groups, and mobile support forces. These forces insure the gaining of the pre-requisite degree of air and sea superiority, and provide the logistic support necessary, for sustained operations at sea.

The amphibious task force provides the capability to project naval power ashore. It consists of four components. The first two are provided by the warship elements of the Navy; namely, a carrier group for air support and air defence, and a group of surface ships for gunfire support and close-in anti-submarine defence. The third component, consisting of specially designed amphibious assault ships, is provided by the amphibious forces of the Navy. And finally, the fourth component, the specialist air/ground landing force adapted to living aboard ships and fighting from them, is provided by the Marine Corps.

The amphibious forces of the Navy (which roughly constitute 15 per cent. of the Navy's resources) are provided to the two principal sea commands, the Atlantic and Pacific Fleets. Elements of the amphibious forces are further assigned to subordinate strike fleets for the formation of amphibious task forces tailored in size and composition to perform a particular mission.

Amphibious resources such as bases and training centres, and specialist units such as amphibious construction battalions and under-water demolition teams, form an important part of the Navy's ability to support amphibious operations. But the crux of the matter is the availability of amphibious assault shipping.

There are eight different types of assault ships in commission. Each serves a specific purpose. All are necessary properly to support the modern combined helicopterborne/waterborne assault landing.

The amphibious assault ships (helicopters assault transports known as LPHS, which are similar to the Commando carrier, H.M.S. *Bulwark*) constitute the backbone of the vertical assault landing. Those in commission are converted support carriers. Others, which have been specifically designed for this role, are under construction. The dock landing ships, which are fitted with a large helicopter platform, also play an important role in the vertical assault. They are versatile vessels carrying amphibian vehicles and landing craft to support the waterborne landing as well. A new version of the dock landing ship, called the amphibious transport dock, is the companion vessel to the new helicopter assault carriers. This version has a much improved flight deck. Several of them are also under construction.

All of these vessels have a speed in excess of 20 knots. This speed of advance is necessary to provide amphibious elements with the ability to close rapidly on an objective area and to operate with fast carrier striking forces.

In addition to the dock landing ships the amphibious ships providing the mainstay of the waterborne landing capability are attack transports, attack cargo ships, and tank landing ships. These vessels are the workhorses of the amphibious forces. Combat loaded, an attack transport lifts a battalion and 1,200 tons of equipment and supplies. An attack cargo ship lifts 2,000 tons of assault cargo. Both types have a speed of advance of 13–14 knots, carry sufficient numbers of landing craft to transport their troops and cargo ashore, and are fitted with small helicopter platforms. The tank landing ship, the latest class having a speed of 17 knots and

the ability to operate helicopters on its upper deck, is used primarily to lift tanks, artillery, and amphibian vehicles. The tanks and artillery may be transported ashore in landing craft or landed directly if the tank landing ship is beached.

Another type of amphibious ship in commission is the amphibious force flagship, which has the communications facilities necessary for the intricate business of controlling and co-ordinating all of the air, surface, sub-surface, and landing force elements involved in an amphibious assault operation.

The approximately 110 amphibious warfare ships in commission are capable of supporting the conducting of helicopterborne/waterborne assault landings on a major scale. The total lift is one and a half divisions and one and a half aircraft wings. The shipping is deployed around the world and married up with its Marine landing force partners. Two-thirds are with the Pacific Fleet and the other one-third is with the Atlantic Fleet.

The landing forces are provided by the Marine Corps from its Fleet Marine Force, which constitutes 60 per cent. of the entire Corps, or about 100,000 men. The Fleet Marine Force is divided into two major components—one under the operational control of the Commander of the Pacific Fleet and the other under the operational control of the Commander of the Atlantic Fleet. The principal landing force units in each fleet are division/aircraft wing combat teams.

In the Pacific Command there is a division/wing team stationed on the west coast of the United States in southern California and another team which has been deployed to the Far East—stationed on bases in Okinawa and Japan. These two division/wing teams provide the landing forces for the First Fleet, which operates throughout the Pacific, and for the Seventh Fleet, operating in the western Pacific. The team stationed in the Far East maintains a brigade size unit in the State of Hawaii and keeps a small landing force afloat with the Seventh Fleet.

Within the Atlantic Command there is a division/aircraft wing combat team stationed on the east coast of the United States in the State of North Carolina. This team provides the landing forces for the Second Fleet, which operates throughout the Atlantic (and is the U.S. component of the N.A.T.O. Strike Fleet), and for the Sixth Fleet, operating in the Mediterranean Sea. It maintains on station with the Sixth Fleet a landing force of battalion landing team strength (a force of combined arms numbering 2,000 men).

A dock landing ship, as available and adapted for use of helicopters, provides a limited vertical assault capability with this force. Dock landing ships so converted may carry and maintain 12 H.U.S. (Wessex) type helicopters. Each helicopter can lift ten men. And to provide the capability of establishing a shore base for the embarked helicopters, large landing craft pre-loaded with the necessary equipment and supplies are carried in the vessel's well-deck. During periods of increased tensions additional landing force units are deployed afloat with the strike fleets.

Forces so deployed making use of the sea as a base afford great strategic and tactical flexibility. The seas are free. Nobody's permission need be obtained to use them. Nor does range constitute a problem. Naval forces are maintained underway by replenishment ships of the mobile support forces.

Capitalization on this freedom of movement emphasizes the strategic value of sea-based forces in these other important respects.

Firstly, they force the enemy into a "disproportionate distribution" of his forces to meet the wide-flung threat of amphibious landings along his entire coastline (Liddell Hart in his article makes this a principal argument for an amphibious warfare

capability). Secondly, they greatly reduce reliance upon bases on foreign soils. As Great Britain's strategic planners are so keenly aware, the past few years have witnessed a steady decline in the number of these bases available. And because of the political climate in certain areas of the world today, current base rights agreements may become more and more tenuous.

Thirdly, they obviate the need for the world-wide pre-positioning of equipment and supplies. In contrast, the amphibious task force carries its logistical requirements in mobile bases capable of being at the exact location required. Fourthly, the use of sea-based forces permits a wide latitude of decision in the political sphere. At the first hint of a communist intention to foment a limited war within a maritime area, they can be moved secretly to hover over the horizon in an area of tension. Thereafter, depending on political developments, a variety of courses of action is open. The forces can be silently withdrawn to avoid adverse propaganda; they may by a show of force deter action designed to confront the West with a *fait accompli*; or, at the decisive moment, the landing force may be ordered ashore employing the precise degree of power required—ranging from the bloodless landing at Lebanon to the full-scale assault at Inchon in Korea.

In addition to these advantages inherent in the mobility and flexibility of an amphibious force, there is pure economics to be considered. Ships provide by far the cheapest means in dollars and in pounds sterling yet to be discovered for the movement of the requirements of military forces. For example, each ton of cargo transported across the ocean by aircraft demands about one and a half tons of costly aviation fuel to be sea-lifted across the same ocean to make the system work. Today's military force of combined arms requires many times the motor fuel that its counterpart demanded in 1945. Only ships will satisfy most of this great thirst.

In spite of the immense strategic importance of the Navy's amphibious forces in the exploitation of the sea as a base, ships alone are not adequate. Professional landing forces of combined arms are equally indispensable. Captain Liddell Hart defines this very clearly in his article, wherein he states, "... 'adequate amphibious means' are not only a matter of ships. Skilled personnel are of no less importance, and they need to be available in adequate numbers if landing operations are to be executed smoothly and exploited quickly. The required skill is the fruit of long training in amphibious techniques and of the constant practice in combination of the various elements of such a force."

He also cites the value of Marines in fulfilling this requirement as being amply acknowledged by such famous British expeditionary leaders as Admiral Vernon, Lord St. Vincent, and Lord Nelson. Another famous British military authority, General Sir John Moore, may be quoted to emphasize the attribute of readiness endowed to forces stationed aboard ships. He espoused readiness to meet any crisis by "... keeping a disposable floating force always ready to act offensively." Readiness to fight from ships as a completely integrated air/ground team of all arms and services is the hallmark of the United States Marine Corps.

Organizational readiness has been attained by those whose wisdom was responsible for the providing of the three divisions of combined arms, the three aircraft wings of all types of combat aircraft, and their supporting elements known as force troops.

Not mentioned previously, force troops of the Fleet Marine Force are composed of units of both heavy and medium tanks, artillery (including surface-to-surface free rockets with atomic warheads and anti-aircraft guided missiles), engineers, amphibian

vehicles, motor transport, communications, medical, supply and service, and other combat and combat service support elements. These units are used to augment the division/wing teams as the situation demands in order to ensure that properly balanced forces are immediately available for sustained operations in any type of combat anywhere in the world.

Operational readiness is the product of a dedicated Corps' determination to continue to demonstrate that it has no peer in its speciality and ranks among the finest bodies of fighting men in the world. Operational readiness is attained through constant training: by embarking air/ground teams of varying strengths and composition aboard different types of amphibious assault ships; by using a combination of means to conduct landings against light to heavy opposition involving both atomic and conventional weapons; and by capitalizing on the unique opportunity afforded in Marine forces so deployed as to take advantage of the great variety of climate and terrain available over the breadth of two oceans, the Caribbean, Philippine, South China, and Mediterranean Seas, and the coast of Alaska.

It may be appropriate to stress for British readers that all personnel, both officers and men, serving in the divisions, aircraft wings, and supporting combat and service units are recruited and trained under the one cap badge—the Marine Corps Emblem.

British officers who served with the Commonwealth Division in Korea have made many highly complimentary remarks about the performance of Marine close air support. The justification of this praise is not only due to the courage and flying ability of the pilots, but to the one cap badge system of organization as well.

Marine aviators receive essentially the same basic training as their brother ground officers. They continue their military education attending the same intermediate and high-level schools. This educational system provides cross-training for the aviators and the ground officers of all arms and services in the capabilities and limitations of every element of the air/ground team. In short, integrated training of all Marine officers insures the gaining of a true understanding of the other fellow's problems.

The Marine pilots in Korea, with this educational background and daily training with ground units prior to entry into combat, had a sympathetic understanding of the infantryman's problem and knew exactly what to look for as they pressed home their attacks at ' nought feet.'

Consideration of Marine aviation (which constitutes approximately 30 per cent. of the Corps) offers one excellent means of demonstrating the ' oneness ' of the Corps. Aviators are unrestricted line officers capable of filling a wide range of non-aviation billets. Many serve side by side with ground officers in staff jobs (on both the G and the A/Q sides). Enlisted men (other ranks) must pass examinations in ground subjects as well as in their technical specialties before being eligible for promotion. All Marines receive basic infantry training. One of the most cherished traditions of the Corps is that every Marine is firstly a rifleman.

This policy paid many dividends throughout World War II. For example, during the historic defence of Wake Island, after they had lost their planes to enemy action, aviation personnel fought with great distinction as infantrymen in the line.

The closeness of the association of ground and aviation units engendered the development by the Marine Corps of ground/air firepower and mobility as early as the late 1920s. At that time in Nicaragua the technique of dive bombing was born to support foot patrols. These same Central American jungles saw emergency supply and the evacuation of casualties by aircraft using makeshift runways such as village

streets. Marines began keenly to appreciate the potentialities and the potency of their concept of the air/ground team.

The amphibious campaigns in the islands of the Pacific of World War II proved the validity of this concept and saw the continued refinement of both the equipment and techniques for close air support. The culmination of this refinement was realized in Korea when specially designed radars made close air support continuously available under all conditions of visibility.

The famous Chosin Reservoir withdrawal in the Korean War, conducted by the balanced ground forces of infantry, tanks, and artillery of the 1st Marine Division and supported by the combat aircraft of the 1st Marine Aircraft Wing, provides a classic example of the fighting prowess of completely integrated ground and air units. Against seemingly impossible odds, and under a cloud of predictions of disaster, this force fought for three weeks against eight Red Chinese divisions, over a distance of 60 miles, while suffering 4,418 battle casualties. And it arrived at the evacuation port of Hungnam an intact fighting outfit. Figures obtained from enemy testimony and captured documents set enemy losses at 37,500. Marine ground forces killed 15,000 and wounded 7,500. Marine air was credited with 10,000 killed and 5,000 wounded.

At the conclusion of the operation, Major-General O. P. Smith, Commanding General, 1st Marine Division, wrote to Major-General Field Harris, Commanding General, 1st Marine Aircraft Wing: "Never in history has Marine aviation given more convincing proof of its indispensable value to the ground Marine. A bond of understanding has been established that will never be broken."

This praise not only refers to the firepower delivered by attack aircraft, it also applies to the support provided by transport aircraft of the wing, which delivered emergency supplies and evacuated thousands of casualties during the break-out to the sea. The transport aircraft were of both the fixed-wing and rotary-wing types. A few months earlier, at the beginning of the Korean campaign, in August, 1950, Marine aviation introduced the mobility of the helicopter to the battlefield.

Today the vertical assault capability provided by the helicopter is an invaluable asset to amphibious forces in both the landing and operations ashore. The two salient features of the helicopter's influence on tactics are; firstly, it adds great depth to the battlefield, forcing the enemy to fight on two fronts; and secondly, it increases the tactical element of mobility on a scale commensurate with the atomic weapon's increase of the tactical element of firepower.

To attain the versatility afforded by the implementation of these two tactical advantages, each Marine Aircraft Wing contains helicopter units. The helicopters in these units number 60 light transports (each capable of lifting 10 men or 3,500 lb.) with the primary role of the movement of troop formations; 30 medium transports (each capable of lifting 24 men or 6,000 lb.) with the primary role of providing logistic support; and 10 of the liaison/observation type (each capable of lifting 3 men).

The helicopter squadrons plus the landing force's supporting motor transport and amphibian vehicle battalions (ashore the amphibian vehicle may operate as a lightly armoured personnel carrier) give the Landing Force Commander a wide latitude in deciding what ratio of these types of mobility to use to meet any particular situation.

In making the decision as to the degree of reliance to be placed on the helicopter, he may employ the following rule of thumb: against light to moderate opposition operations may be extended to the effective range of the helicopter (100 miles); while operations against heavy opposition should be conducted at closer ranges

(0–50 miles) to allow for rapid link-up with forces landed over the beach supported by tanks, self-propelled artillery, engineer equipment, and large-scale tonnages of supplies, all of which are immediately available due to the heavy lift capability and the vast cargo capacity of the amphibious assault ships.

The foregoing illustrates the continuing development of the sea/land/air operational capability of the Marine Corps. Liddell Hart states: "... It has gained so much experience in combining land, sea, and air action that it forms a nucleus and a pattern for further development. Logically it should be the basis for further progress ..."

Progress would indeed be made, in the form of a much more effective strategy, if the N.A.T.O. and S.E.A.T.O. alliances exploited to the maximum their maritime nature. The contribution by all of the member nations of adequate numbers of amphibious ships and specialist land and air forces to balanced allied amphibious forces in readiness would provide the greatest strategic asset attainable to defeat in any maritime area the enemy's strategy of fomenting multiple limited wars.

A STEADFAST SERVANT OF THE CROWN

By Admiral Sir William Davis, G.C.B., D.S.O.

FEW officers who have served on the Board of Admiralty, the Army Council, or the Air Council would deny that the fighting Services have often been fortunate in having men of outstanding ability and intense devotion as Permanent Secretaries of their respective Ministries. One such has recently retired from the Admiralty after over 14 years' service as its Secretary. Sir John Lang has proved himself a staunch champion and a good friend of the Navy, and it is perhaps fitting that something of the man and his career should be known.

The record of Sir John's career can well serve as an inspiration to many a young man setting forth in the public service. He entered the Admiralty in 1914, shortly before his 18th birthday, as a second division clerk. He left a little later to enlist in the Royal Marines, and gained a commission in that fine corps, returning to Admiralty service after the war. In 1930 he was specially promoted to the administrative class of the Civil Service, and in less than 16 years, and just before his 50th birthday, had risen to the post of Secretary of the Admiralty.

The writer has, during the last 25 years, worked with Sir John as a colleague and seen much of his work. With his passion for anonymity it is difficult to pick out, before becoming Secretary, the posts where he made his biggest impact. But to a naval officer his work during the last war in charge of the War Registry—the main distributing and message centre of the Admiralty—was altogether outstanding.

But what of the man? Gifted with a pawky sense of humour, his naval colleagues soon found him at Board meetings a swordsman worthy of their steel. His thoroughness, endurance, patience, and objective sense of fairness were outstanding. He abhorred slipshod work and thinking, and it was stimulating to watch him dissect and dismiss any half-baked proposal. He could be 'difficult' with his colleagues, and when necessary could also be severe, and even frightening, to young men who thought they knew 'all the answers.' Nevertheless there can be few who have done more unobtrusively to help and encourage the younger members of the Admiralty, naval and civilian alike. Though outwardly a formalist with a very proper insistence for work being done through the correct channels, he was no bureaucratic diehard.

Sir John's 14 years as Secretary of the Admiralty were far from easy ones. Revolutionary changes in the tools of war, in strategy, and in tactics, were continually taking place and affecting the role of the Navy in the pattern of the nation's defence. The country's impoverishment after the last war prevented many desirable changes being brought in. Nevertheless Sir John's steadfastness and abiding conviction in the great service the Navy had to offer the country proved a great comfort and support to the six First Lords he served with such distinction, as indeed to all his naval colleagues.

He nursed a tremendous admiration for his great predecessor Samuel Pepys, whose portrait adorns the Secretary's room. In the years to come, when time lends a perspective to his work, it will not be surprising if his name is coupled with other great Secretaries of the Admiralty, men like Evan Nepean, Philip Stevens, John Barrow, Evan MacGregor, and Oswyn Murray, all of whom are now an integral part of the Navy's history.

A NEW SYSTEM FOR DIVISIONAL COMMUNICATIONS

By Lieut.-Colonel J. Shaw, M.B.E., Royal Signals

"The strength of an Army, like power in mechanics, is estimated by multiplying the mass by the velocity ; a rapid march augments its morale and increases its means of victory." Napoleon.

THE system of communications used in a formation is a vital factor in determining its mobility (velocity). One of the ways that Royal Signals can augment the 'mass' of an army is by employing the minimum number of men on communications tasks, thereby freeing men for other arms (the mass).

It has become ever more important because of the threat of enemy nuclear weapons and in order to take advantage of the great destructive power of one's own nuclear weapons, to use only systems of communications which can be rapidly established and allow for extremely rapid and frequent movement of Headquarters.

In wars in the immediate past, it has been usual to use line communication during planning stages of mobile operations and direct link wireless nets once battle is joined. This has led to a philosophy that duplex switched circuits are essential during the planning stage of any battle and, to this end, various equipments such as radio relay, multi-channel carrier equipment, and single channel duplex radio point-to-point equipments have been produced. All efforts have been directed to make duplex switched communications for the planning phases of army operations quicker to establish. But has anyone queried the need for duplex communications during these planning phases of operations ?

Need for the Duplex System?

In the Past.

Let us examine the advantages of a duplex system which make it so desirable during the planning phases. Take the well-known and tried, but now out of date, line system as an example. In the past the line system was always treated as not liable to interception and unofficially regarded as suitable for secret traffic by most divisions. Any subscriber in the division could, theoretically at least, be connected to and speak to any other subscriber in the division. This, in the past, has been impracticable using direct link wireless nets.

In the past, using H.F. direct link wireless nets, it has not always been possible (particularly at night) to speak over the distances required. It has been possible to speak over these distances through three telephone exchanges (i.e., from Battalion to Main Division, or from Brigade to Rear Division through Main Division).

In the Immediate Future

Let us now consider the facilities that could be provided in the immediate future by, on the one hand, duplex switched radio communications (radio relay or duplex single channel radio circuits) and, on the other, simplex direct link net radio to meet the attributes of the switched line network.

As far as security is concerned, radio relay of a type truly suitable for mobile use can provide no real advantage over V.H.F. direct link wireless, as the same degree of security can be accorded to each. The direct link wireless sets that have recently been introduced into service allow sets to be adjusted exactly to any frequency within a matter of a minute or two without netting. There is no doubt that

it will be possible in the next generation of direct link wireless sets to arrange that a frequency could be exactly selected on a decade system almost as quickly as a telephone number is dialled. American equipments have this system now. Thus switching backwards and forwards between simplex wireless nets could be done quickly and accurately.

The use of combined V.H.F./H.F. direct link wireless terminals have improved the range possibilities of direct link wireless in divisions. When high power V.H.F. wireless sets are introduced, there should be no communications distance normally required within divisions which cannot be successfully spoken over by the V.H.F./H.F. net system.

The Proposed System

The Wireless Station.—Any person requiring communications within the divisional H.Q. complex or requiring communications to divisional H.Q. would be equipped with the following installation, or a variation of it (by the omission of certain items not required) :—

H.P. V.H.F. set (variable power) ;
H.P. H.F. set (variable power) ;
Facsimile equipment ;
Fuel-cell power source.

It is confidently expected that all the listed items, including ancillaries, if properly designed together as an integrated project, could be fitted into and operated from one ordinary ¼-ton truck. The equipment would be simple enough to operate for an ordinary staff officer or clerk. It is anticipated that the total cost of the installation, including ancillaries, would be of the order of £10,000.

Organization.—Those equipped with this communication station would be grouped into nets, as now, which would each be allotted one frequency, or two if they had V.H.F. and H.F. sets. Each net would comprise those members of the Staff, divisional units, etc., who most often wish to talk to each other.

Some of these nets (e.g. Command nets) would, as now, be reserved for exclusive use of those on the net and no other outside set would be permitted to ' dial ' into their frequency. Let us call these ' exclusive ' nets. Sets on other nets would normally remain on their allotted frequency, but if they wished to talk to some set on another net they would be permitted to ' dial ' into that net frequency. We will call these ' common ' nets. If necessary a net could be changed from a ' common ' to an ' exclusive ' net and *vice versa* according to the state of military operations.

It is estimated that 130 complete terminals would be required for the ' common ' nets (i.e. to replace in general telephones at division and brigade Headquarters) in a three brigade division, and another 30 complete radio terminals for ' exclusive ' nets (i.e. divisional Command nets).

Telegraphy.—Telegraph messages could be passed by facsimile from terminal to terminal without going through a Signal Centre.

Grade of Service on Common Network System

The exact numbers and identities of stations allotted to each common network would need to be determined exactly by practical experience and adjusted from time to time to meet the operational day-to-day requirements. I think we would not

be far off if we hazarded a guess of 13 common networks each with, say, ten stations on it. These nets might be allotted to, "G" Ops. (in addition to exclusive Divisional Comd. net), R.A. (in addition to exclusive C.R.A. Comd. net), Div. Intelligence, A.Q., R.E., R. Signals, R.A.S.C., R.A.O.C., R.E.M.E., Div. H.Q. Miscellaneous, and Brigade H.Q. Miscellaneous (one for each Brigade H.Q.).

Therefore, we have 130 stations sharing 13 channels (frequencies) of communication (in addition to this, of course, there would be the normal Divisional Command exclusive nets). This service of course could be increased by using V.H.F. and H.F. nets at the same time. The service could also be improved by reducing the numbers of stations on each common network, remembering that the stations are only clustered into a common net for convenience and can dial into any other network. The eventual allocation of stations to nets must be determined from experience and frequency availability.

Each net, whether common or exclusive, would be engineered (i.e. stations sited and aerials supervised) under control of Royal Signals. Royal Signals would man and operate control stations of exclusive networks, and the most senior stations of common networks.

Advantages of Plan

The advantages of the plan are very considerable. The possibility of maintaining direct link wireless communications 24 hours a day in all phases of operations would allow the maximum mobility which it is possible for communications to confer on the staff and associated units and services. There would be a considerable reduction in the numbers of signallers required in the division. No exchange operators would be required. No Signal Centre personnel would be required except for S.D.S. Owing to the simplicity of operation of the equipment the numbers of Royal Signal wireless operators would not be increased but probably reduced. Very few linemen would be required and these mainly for dealing with Corps rear link duplex communications. It is suggested that a limited number of the staff at Divisional Headquarters be connected as subscribers directly on to the Corps exchanges.

Because of the interswitching between nets the enemy would find it very difficult to establish the Command structure by listening in to our wireless nets.

While the power output of all transmitters would normally be adjusted to the minimum power required to provide communications between the two speaking terminals, the variable power of the transmitters would normally enable the power to be increased to overcome jamming.

The use of only one type of communications station for the divisional-brigade communications would make supply, servicing, training, and repair much simpler problems.

Conclusions and Recommendations

The system outlined above gives such advantages that it should at least be tried. There are those who might say that the sharing of communication channels for telegraphy (facsimile) and voice might prove impracticable. In the author's experience, in peace and war, the amount of telegraphy used within the division, if adequate voice communication is available, is very little. Much of the telegraphy consists of A.Q. returns submitted around midnight, when the circuits are not

required normally for voice communication. There are others who might say that a more glamorous duplex switched system of communication must be imposed on fighting formations because it is used in civil life where constant improvements take place. To them, I would say the fighting formation is a specialized body of men. Mobility is one of the prime requirements of warfare, particularly of modern nuclear warfare. Duplex switched systems, even employing radio relay and similar equipments, require many interconnections, involve an extensive line effort in the laying out of tails for extensions, and radio relay sets. These duplex systems can never, by their very nature, confer on the fighting formations the mobility possible with direct link wireless. Why must we slavishly follow the civilian when our requirement is specialized? Let us think for ourselves and produce communications which further the main principles of war.

A FORGOTTEN CAMPAIGN—III

UNDER THE RED FLAG

By Captain Donald Macintyre, D.S.O., D.S.C., R.N. (Retd.)

DURING the winter of 1916 the rumblings of the storm to come had reached even to the isolated force at Reval. Cut off as were the British submarine crews from political news by the inherent secretiveness of their Russian hosts, and by the language barrier as much as by the Russian censorship, there was no hiding from them the widespread discontent and dissatisfaction with the ineffectiveness of the autocratic Tsar and the corruption of his ministers.

The Russian armies had suffered the most shattering defeats at German hands, losing millions of men killed and taken prisoner. Only the astonishing resilience of the Russian people, aided by, as the War Minister put it, " immeasurable distances, impassable roads, and the mercy of St. Nicholas, patron of Holy Russia," had staved off collapse up to this time.

It was inherently difficult, almost blasphemous, for the average Russian to criticize directly the all-powerful, divinely appointed Tsar. It was therefore, and not without justification, on the German-born Tsarina and her sinister familiar, the rascally monk Rasputin, that blame was directed. That this frightful creature had risen through the religious credulity of the average Russian and by the use of his strong hypnotic powers from a background of peasant squalor to that of confidant and mentor to the Tsar and his Empress could have happened nowhere else but in ' Holy Russia.'

In spite of a life of debauchery, seduction, and rape, Rasputin's magnetic personality soon gained for him a devoted following; his histrionic abilities secured for him a reputation for great sanctity. He was taken under the protection of another dupe, the Rector of the Theological Academy of Petrograd, who was also confessor to the Tsarina. From there to the confidence of the Tsarina herself was but a step.

When Rasputin was able apparently to succeed, where doctors had all failed, in curing the haemophilia from which the young Tsarevitch suffered, his influence over the Empress became absolute. She herself, realizing the ineffective nature of her husband's character, had steadily assumed greater and greater responsibilities for State affairs until the position was reached that no minister or high official could be appointed without her approval. With the arrival of Rasputin on the scene, this came to mean that such appointments were in the hands of this ignorant, self-seeking creature, and, as often as not, sold to the highest bidder.

Then, early in 1917, Rasputin was assassinated by Prince Felix Youssoupoff. The news sent a wave of optimism through at least the educated classes of Russia. But the political sickness of the country was not curable by cutting off the rotten growth which was but the outward symptom of inward mortal disease. Removing Rasputin did not improve the supply and distribution of food in Petrograd, give arms and ammunition to the troops at the front, or land to the discontented peasants. Nothing, moreover, was done to improve the conditions of life or remove the humiliating restrictions on the liberty and self-respect of the sailors and soldiers.

While the savage Russian winter continued to grip the land, the gathering storm held off. But in March it burst in the form of bread riots in Petrograd. When the

garrison of the capital was called out to clear the streets, the regiments, one by one, refused orders and went over to the rioters, and to them were added the sailors from the fleet at Kronstadt.

The fury of the soldiers and sailors fell on their officers who were forced to give up their arms and, at the slightest sign of resistance, were killed. In some cases many of the officers were killed at the outset. Others killed themselves in shame at their dishonour.

At this stage the Revolution was remarkable for its complete lack of leadership. A firm hand might have been able to quell it. But with an utter lack of grasp of realities, the Tsar ignored the frenzied appeals of Rodzianko, President of the Duma. He remarked to his Minister of Court, "This fat Rodzianko has written me some nonsense to which I will not even reply."

Thus the March revolution was allowed to run its course and the Tsar signed his own death warrant. The Duma, ordered to dissolve, obediently did so, but at once reassembled in another chamber where it could technically be considered a gathering of private citizens. From this body emerged a provisional Government with the lawyer Kerensky at its head.

News of the revolt reached the British flotilla at Reval by means of Commander Cromie, their commanding officer, who had been in Petrograd on leave when it broke out. He had at once found himself in the thick of it when a yelling mob, searching for Russian officers, broke in to the Astoria Hotel where officers of the British Mission were accommodated. With General Poole, Head of the Mission, Cromie faced the mob, calmed their fury, and persuaded them to move on.

When later that morning this good work was undone by some irresponsible policemen on the roof of the Astoria firing at the crowds below and a fresh rush for the hotel was made, Cromie negotiated with the leaders of the rioters. He persuaded them—mostly sailors from the naval base at Kronstadt—to take over the hotel in an orderly manner, placing sentries on every floor, and induced them to destroy all the stock of liquor in the hotel before the rank and file could get hold of it.

After a hazardous journey through the streets of Petrograd, dodging the fire of machine-guns which were chattering from the rooftops and sweeping the approaches to the bridges which had to be crossed, Cromie found a train leaving for Reval. There, all was quiet, but it was an ominous quiet, the *Dwina*'s sailors' sullen looks and the nervous tension amongst the Russian officers betraying the unrest beneath the surface.

Then, on the morning of 16th March, two members of the Duma arrived to announce the abdication of the Tsar, the assumption of power by the provisional Government, and to enlist the support of the sailors for the new régime. After the visit of these two typical red revolutionaries to the *Dwina*, where they toadied to the crew, mutiny was inevitable.

In the afternoon cheerful crowds, carrying red flags, arrived on the jetty calling to the Russian sailors to ignore their officers and come ashore to join the demonstration. With barely a moment's hesitation the whole crew of the *Dwina* trooped off down the gangplank, brushing aside the commander of the ship who stood there, helpless to intervene. The British sailors, going about their work, watched it all with an impassive indifference and an occasional shrug.

Ashore, the mutineers joined the civilians in burning down the prisons and the houses of the various officials. The military Governor, an old admiral, was beaten

up, while the governor of one of the prisons was killed. Having thus tasted blood, there is little doubt that, but for the presence of the British flotilla, there would have been at Reval the same bloody events which took place at Helsingfors and Kronstadt.

At Helsingfors appalling scenes of savage slaughter were enacted. Unpopular officers, and officers from the Baltic States with German names, often the best officers of the fleet, were singled out and many of them ruthlessly murdered in the first hours of the revolt. In many of the battleships officers were butchered in the most savage way.

At Kronstadt, the great fortress guarding Petrograd, which was also the main naval shore base, a reign of terror began on 15th March with the murder of the Commander-in-Chief, Admiral Viren, whose body was cut in small pieces and burnt in the public square. Others were bayonetted and left to die by inches, or pushed alive under the ice of the harbour. In all nearly 100 officers were killed and many hundreds were imprisoned under the most barbarous conditions.

Finally the Commander-in-Chief of the Baltic Fleet, Admiral Nepenin, though he had accepted the new Government and ordered the fleet to obey it, was shot down and killed to give way to the self-seeking Admiral Maximoff, who had had himself 'elected' Commander-in-Chief by the sailors' Soviet. Donning a red tie and red rosettes, he surrounded himself with a guard of armed sailors similarly decorated. From then onwards the Baltic Fleet, in which was included the British submarine flotilla, was nominally under the command of this buffoon, but the real power lay with the central Soviet of the Baltic fleet or 'Centrobalt' as it was known for short.

While these infamies were taking place at Kronstadt and Helsingfors, at Reval the mutineers were restrained from any murder of their officers by the intervention of Cromie. On the day following the demonstrations in the town, the crew of the *Dwina* were ready to act. They had already elected a ship's Soviet. A body of sailors with arms in their hands came aft, forcing their way unceremoniously into the wardroom. Their object was to disarm the Russian officers and they proceeded to break into their cabins, opening off the wardroom, to search for the personal revolvers with which every Russian naval officer was issued.

The loss of these weapons was looked on as a dreadful disgrace. This, and the committee's order that no officers might leave or enter the ship until the committee had decided what to do with certain of them, brought home to the officers of the *Dwina* the full gravity of the situation. They seemed stunned and quite unable to take any concerted action. It was left to Cromie to devise a means of ensuring some degree of safety for them.

He knew that in the gunnery training ship *Peter Veliki* there was a better lot of men in control. To them he sent a message asking them to send over deputies to reason with the *Dwina*'s ship's company. At Cromie's behest, they not only came over and impressed on them the necessity for avoiding all violence, but actually persuaded them to hand back the officers' weapons.

But Cromie knew very well that the disarming of the officers was an agreed policy of the leaders of the revolt. It was bound to come eventually, so he now persuaded Captain Nikitin of the *Dwina*, who was completely at a loss as to how to conduct himself and only too glad to follow Cromie's lead, to give the arms back to the men once more, making the more reliable amongst them responsible for the safety of the officers.

Hardly had this crisis been resolved than Cromie found himself personally at odds with the ship's committee, the chairman of which, incidentally, had been his bath attendant. Objection was expressed to Cromie receiving Russian officers aboard. He at once protested and took the strong line to which he was to adhere unwaveringly, that what the Russians did between themselves was their business but that the British personnel would not allow themselves to be involved and intended to carry on their duty of fighting the enemy. If this required that Russian officers should confer with him, he would brook no interference.

The mutineers were no match for Cromie's determination and, on his assurance that his Russian visitors would not discuss political matters with officers of the *Dwina*, they withdrew their objection. A few hours later he was once again at odds with the committee, who decided that they wished to arrest several officers.

Amongst them was Boris Miller, the Russian liaison officer in *E.1*, whose unfortunate manner with the sailors, which had also not endeared him to the British seamen for that matter, had put him high on the list for liquidation. Cromie at once plunged into the fray. Facing the crowd of armed and truculent Russian sailors with Miller beside him, he harangued them, many a dramatic gesture and his fierce, flashing glance pointing the meaning of his words which were translated by an interpreter. Whatever were Miller's faults, he thundered, he was serving under the White Ensign and subject only to British discipline. If the Russians had any complaints they must put them in writing, whereupon he would investigate the matter and, if necessary, turn the offender over to the Centrobalt.

Discomfited, the Soviet retired to set down on paper their complaints. Miller's life hung on a thread. Cromie, therefore, used the time thus gained to get him sent out of the ship together with another Russian officer. The following day he got them sent on leave and out of harm's way.

A number of Russian officers were saved in this way by Cromie's delaying tactics, wiser thoughts supervening amongst the committee members on their being forced to take time to give more consideration to their complaints. One of the proposed victims who owed his life to Cromie was the *Dwina*'s paymaster. Wherever violence broke out in the fleet the ships' paymasters were nearly always the first to suffer, the men believing that they swindled them out of pay and rations. When the paymaster was arrested, Cromie, fearing that the wretched man was likely to be summarily executed, boldly faced the committee and told them that his men could not sit still and see murder done, though they would not interfere in any other way. As a result the paymaster was sent off to the Centrobalt where he got off with a month's imprisonment.

Thus, by sheer force of personality and fearless conduct, Cromie came to dominate the scene, preventing any bloodshed and even keeping the depot ship's crew and the dockyard workers at work so that the British submarines could continue to prepare for the campaigning season which was about to open with the melting of the ice.

The situation was a fantastic one, however, some of the results of the new régime being simply ludicrous, others most alarming. Many of the Russian sailors were quite childish in the way they exercised their new-found liberty; returning on board when they felt inclined, dressed in weird garments—lavender gloves, boots with grey cloth uppers or spats, straw hats—anything to show their independence. They succeeded only in making themselves ridiculous.

Nevertheless, underneath this foolish behaviour was the ever-present threat of a resort to violence if the new masters did not get their own way. Armed sentries

lounged everywhere, and from examples elsewhere it was known that they would not hesitate to shoot to kill at the slightest provocation. To avoid risk of such occurrences, even the British officers submitted to carrying passes signed by an able seaman of the *Dwina* giving them permission to go ashore.

Cromie's activities were not confined to running the *Dwina* in double harness with the ship's Soviet. Ashore, he had taken on the role of a ' Scarlet Pimpernel,' smuggling out his many friends who were in danger of arrest. While the ice held the flotilla in harbour, he was here, there, and everywhere.

Undoubtedly Cromie's intrepid soul thoroughly enjoyed this side of his life at that time. He loved being looked up to as a guardian angel and rescuer, particularly of beauty in distress. Women were always susceptible to his Byronic good looks. When he could also display enterprise and daring on their behalf, he was irresistible.

This side of his activities did not, however, interfere with his determination that, in spite of the Revolution, his flotilla, with whatever Russian forces could still be induced to fight, must, as soon as the ice cleared, be ready to undertake the defence of the Gulf of Finland, the sea route to Russia's heart, the capital city of Petrograd.

On the Russian Easter Day a great demonstration was held in the *Dwina* when, in the presence of huge crowds from the town, with bands and flags, the old Imperial Ensign was hauled down and the Red Flag hoisted in its place. The *Dwina*, under her original name of *Pamyat Azova*, had played a leading part in the mutiny of 1905 and in consequence had had her name, a greatly honoured one in the Russian Navy, taken away. She had also lost the right, belonging to every *Pamyat Azova*, of wearing the St. George flag at her masthead in memory of the Battle of Navarino. Now, after the Red Flag had been hoisted, hymns sung to the ' heroes ' of 1905, who had distinguished themselves by murdering their officers, and the *Marseillaise* played, the ship's name was solemnly changed and the St. George flag run up.

The mixed motives of the revolutionaries at this time is shown by this hoisting of the St. George flag, a proud standard meant to be carried into battle against the country's enemies. There was no peace movement as yet amongst the majority, though the Bolshevik agitators were preaching peace with Germany and the transformation of the war into a civil war, and were making headway with their propaganda.

The provisional Government under Kerensky urged a continuance of the war and, in their ignorance, believed that an army and navy which had murdered their officers and were controlled by committees could face the disciplined might of Germany and Austria. Similarly the sailors of the Baltic fleet had not yet given, up all idea of carrying on the war. With so few officers remaining there was, in fact, small possibility of the big ships ever fighting again. But in the destroyers, minelayers, and submarines, all discipline had not yet vanished. If they could be got to sea, away from the pernicious atmosphere of the ports, there was some chance that they might take part in holding the German fleet outside the Gulf of Finland.

No reliance could be placed on this, however, and while Cromie carried on a never-ending struggle with the continually changing Russian authorities to get some sort of orderly backing for the flotilla, the British crews prepared to take on the task alone. With the C-class boats, which were now ready for operations, there was a force of eight British submarines, and they felt that with luck they could do it.

CORRESPONDENCE

(Correspondence is invited on subjects which have been dealt with in the JOURNAL, *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.)

To the Editor of the R.U.S.I. JOURNAL.

THE NUMERICAL FACTOR IN MODERN WAR

SIR,—I read with great interest the long letter signed T.F.K.H. in your May issue on "The Numerical Factor in Modern War." It is valuable in stimulating discussion, and fuller examination, of a basic question in the historical record of the second World War. As he emphasizes in conclusion, "the answer to this question is of much more than merely academic interest," since "in it surely lies the key to the proper deployment of N.A.T.O. conventional forces for the defence of Western Europe."

In exploring the question, he gives a very fair assessment of the comparative situation in respect of such factors as training, morale, equipment, air, and terrain. But he is evidently puzzled when he comes to the *numerical* factor, for he has shrewdly spotted the contradiction between Lord Alexander's statement about the ratio of numerical superiority required for an effective offensive operation, and the apparent lack of such superiority according to the figures given in his story of the Italian campaign.

The clue to this puzzling contradiction lies in the habit, common among commanders in their accounts, of stating the numbers of 'divisions' on their side and the enemy's without regard to the widely varying scale of the divisions engaged. That too simple basis of comparison is apt to be very misleading—and particularly in the second World War.

Hitler had a fondness for 'paper' strength. As early as 1941, before invading Russia, he doubled the number of his armoured divisions by the expedient of halving the armoured strength in the majority of them. From then onwards he preferred to see divisions shrinking, even to skeletons, rather than disband or amalgamate them. This policy may have been the product of an obsession with paper figures, and a growing tendency to live in illusions—as it seemed to his generals. But it may have been due, in part at least, to the shrewder idea that by keeping up an appearance of large strength, in the total of numbered divisions that could be identified, he would create more alarm among his opponents when he was attacking and more caution when they were attacking. Such a policy of deterrence and defence 'by suggestion' carries advantages when manpower is short.

But in historical analysis it is essential, for true guidance, to discover what was the real strength on either side. That need has not been met in most of the accounts hitherto produced about the campaigns of the second World War. The figures are not easy to ascertain, as too many of the records have been destroyed or mislaid, but an approximate estimate can be reached by cross-bearings from the records that have survived.

By 1941 the establishment of a German division, in men and weapons, was approximately two-thirds that of a British or American division. From 1942 onwards the actual strength was often much less—from a half to a quarter that of an Allied division. So far as can be gauged, the overall average was about one-third in the later stages of the North African and the Italian campaigns, taking account of the extra-divisional formations provided to reinforce the Allied divisions.

This divisional ratio corresponds closely to that of the total numbers of men on either side in the Italian theatre—which from 1944 onwards was over 1,500,000 on the Allied side against less than 500,000 on the opposing side. Even after the despatch of seven divisions in the late summer for the invasion of southern France, the Allied numerical strength in Italy continued to exceed one and a half million.

It becomes evident that in the Italian campaign the Allies always had an effective superiority of about three to one—a very different picture to that conveyed by the habit of ' counting heads ' in the number of so-called divisions. Even so, the success that the Allied forces achieved when attacking in such very difficult mountain country against such tough opponents compares favourably with what was achieved in Normandy and the Rhineland with a larger superiority.

B. H. LIDDELL HART.

15th June, 1961.

WASTAGE IN RECRUITING

SIR,—Considerable comment has been aroused fairly recently as a result of the publication of the following table relating to wastage in recruiting :—

	January to December, 1959		October, 1959, to September, 1960	
	No.	%	No.	%
Discharges by purchase	2,019	11·7	2,001	13·7
Medical Discharges ...	880	5·1	747	5·1
Other Discharges ...	392	2·3	381	2·6
TOTAL ...	3,291	19·1	3,129	21·4

As for some time last year I was partly responsible for the welfare of Regular recruits to the Royal Engineers during their early days in that Corps, I found the figures most interesting.

It seems to me that the wastage due to recruits being medically or ' otherwise unsuitable ' is, so to speak, beyond our control, as no one would want men to stay in the Army in a physical or mental condition unsuited to the training they were due to expect. The real challenge lies in that other 12 per cent. who buy themselves out voluntarily during their first three months of service.

I would say, in opposition to some people's opinion, that soldiers in general, having got down to their training seriously, very seldom fall by the wayside, no matter how hard the work given. In fact, the harder and more challenging the better because, as with most young men, the Army recruit usually seizes with both hands and with gusto the chance to prove himself in front of his companions. The real danger time is that period of suspended animation before the start of training proper, which I maintain need not exist.

In the bad old days when a National Serviceman enlisted, he was told to report on a certain day, and on the day after that he started his training. When a Regular recruit enlists, he may in general report to his first unit on any day and at any time that he pleases. The reason for this, as far as I can see, is that recruiting statisticians believe that an immediate order to report on a specific day might deter the tender fellow from joining, or that he might lose the urge if he spent a few more days at home waiting for the big day to come. I disagree !

The result of all this is that recruits arrive in ones and twos over a period of between two and four weeks at the training regiment. They are held there until sufficient have arrived to form a working party of (say) 40 in number. Their training then begins.

It is during this period (although no effort is spared to keep recruits interested and amused with basic exercises, films, and rifle shooting, etc.) that the average young chap,

eager to get on with the job and his trade, becomes discontented ; suspended somewhere, as it were, in short hair and unglamorous denim, between the two very different worlds of Army and civilian life.

NEVILLE J. ROBERTS.

24th May, 1961.

DEFENCE COSTS

SIR,—Discussions on the all-Regular Army centre round manpower. This may have been sound when wars were fought largely with hand weapons.

Present organizations suggest that something like three times as many men are required in a regiment to back up a field gun as are needed to fire it. Modern research and development should be able to produce a weapon with at least twice the performance in terms of shell effect with no increase in crew. The same reasoning applies to many other pieces of equipment.

The general trend of recent reorganizations has been to reduce the number of weapons in a lieut.-colonel's command. Generally, as the weapons remain the same, this has meant a reduction in fire power, although in regiments equipped with nuclear weapons the fire power has been vastly increased, even if the conventional war capability has thereby suffered a loss. Modern communications should allow one man to exercise command over a larger number spread over a wider area.

It is unfortunate that in considering the relative costs of men or weapons, the capital cost of the machine is charged to defence, while that of the man is charged against the country's economy as a whole. The high capital cost of the weapon tends to conceal the fact that the cost of maintaining a man ready for war is much higher than the cost of maintaining his weapon.

The time has surely come when we should discuss defence costs and recruiting for the army in terms of weapon efficiency rather than manpower.

E. R. A. SEWELL,
Lieut.-Colonel.

25th April, 1961.

WEALTH

SIR,—On reading General Sir Richard Gale's lecture " A Critical Appraisal of N.A.T.O." I find that he perpetrated a howler—quite elementary to anyone who has read about economics, but apparently not even spotted by anyone in his audience.

It is frightening that a person of General Gale's standing, as well as his audience, should have confused ' wealth ' with ' gold.' General Gale said, " Let us remember that the United States still possesses about half the world's wealth." The United States possesses nothing of the sort—they possess indeed about half the world's gold, but that is an entirely different thing, both in theory and practice. What fraction of the world's wealth may be contributed by the United States is not easy to say—it is usually accepted that the best measure of a country's wealth is the gross national product, but comparisons between one country and another are never easy, due not only to rates of exchange but to internal differences of price. It would probably not be setting the share of the United States too high at a quarter, though by some comparisons the fraction may well be lower.

Why this is frightening is because if people like General Gale and his audience really *do* think the United States own half the world's wealth, they will have a totally incorrect appreciation of the productive effort of the United States and the rest of the world. This could lead to some appallingly inaccurate advice being tendered to Ministers, even of a purely military character, precisely because of a muddled and inaccurate idea of the extent of military effort which could be supported by the national production of the free world, as compared with its enemies. Such advice could be disastrous.

ROWLAND BOWEN.

21st June, 1961.

LORD MOUNTEVANS

SIR,—With the authority and help of his widow and family, I am writing a biography of the late Admiral Lord Mountevans (' Evans of the Broke ') for publication by the Oxford University Press. There may be readers of the JOURNAL who have personal recollections of the Admiral. I shall be particularly glad to receive any anecdotal reminiscence of him.

REGINALD POUND.

29th April, 1961.

THE EDUCATION OF THE OFFICER

SIR,—In Major-General Hackett's lecture on " The Education of the Officer " as reported in the R.U.S.I. JOURNAL of February, he quotes on page 44 a Colonel Mawle. This name is misspelt and should read Maule. My authority for this is my article entitled " The Young Officer," compiled from the papers of Colonel Francis Maule, which was published in the *British Army Review* in September, 1956 (p. 52).

I should be grateful if you would make the necessary correction.

R. V. DEWAR-DURIE,
Lieut.-Colonel.

25th April, 1961.

WELLINGTON AT WAR

SIR,—The review of the book *Wellington at War*, 1794–1815 in the May JOURNAL mentions the Duke's consideration for others. The following are examples of it, taken mainly from Earl Stanhope's *Conversations with the Duke of Wellington.*

Correspondence captured from French couriers in Spain sometimes contained letters from the Queen in Paris to her husband, King Joseph, in Madrid. These were not forwarded to him, but the Duke commonly sent a courteous message to the French outposts : " Ayez la bonté de faire dire au roi que madame et les princesses se portent bien."

As Constable of the Tower, the Duke had occasion to discharge one of the staff there for a serious fault. The man later applied to the Duke for money to help in keeping his family, and received it for long, Wellington telling a friend who thought the gift too soft-hearted : " One cannot let the fellow starve."

Proceeding up Constitution Hill one day, the Duke found a small boy burying his pet toad alive in the turf before returning to school, meaning to recover it at his next holidays. The Duke said he expected its health would suffer in the meantime and that he would keep it safe till the holidays arrived.

Two Grosvenor children used to stay at Walmer Castle and stared enviously at the mail bags arriving for his Grace and wished they might contain a letter for themselves. So, the aged Duke sometimes wrote them a letter and placed it among his mails, to the huge delight of the youngsters.

His last illness was aggravated through his going out on a cold day to see that repairs to his tenants' cottages had been properly carried out.

J. L. JACK,
Brigadier-General.

18th June, 1961.

SIXTY YEARS OF ARMOURED CARS

SIR,—I was recently looking up an article in the May, 1960, issue of the JOURNAL and I noticed some remarks in Mr. Ogorkiewicz's article on "Sixty Years of Armoured

Cars." He seems to be unaware of the fact that the 11th Hussars and 12th Lancers were converted from cavalry to armoured car regiments in 1928–29 and from that date until 1939 were stationed one regiment in the United Kingdom and the other in Egypt.

T. J. C. WASHINGTON,
Major.

5th June, 1961.

ASSAULT FROM THE SKY

SIR,—I wish to express my regret for confusing in my article, " Assault from the Sky : Crete, 1941," in the May issue the Sherwood Rangers Yeomanry and 1 Rangers (9th Bn. K.R.R.C. (T.A.)). Wherever ' Sherwood Rangers ' are mentioned, it should, of course, be 1 Rangers, the only United Kingdom Regiment to have the Battle Honour ' Retimo.'

T. A. GIBSON,
Major.

21st June, 1961.

NAVY NOTES

H.M. The Queen

Aides-de-Camp.—Captain C. A. Meyer, R.D., R.N.R., has been appointed a Royal Naval Reserve Aide-de-Camp to The Queen from 28th April, 1961, in succession to Captain J. H. Wright, R.N.R.

Commandant J. Davies, O.B.E., W.R.N.S., Director, Women's Royal Naval Service, has been appointed an Honorary Aide-de-Camp to The Queen from 17th May, 1961, in succession to Commandant Dame Elizabeth Hoyer-Millar, D.B.E., W.R.N.S.

Mediterranean Visits.—Queen Elizabeth the Queen Mother, flying her standard in H.M.Y. *Britannia*, visited Tunis from 24th to 28th April. Her Majesty disembarked from the Royal Yacht at Cagliari on 29th April to fly back to the United Kingdom, and on the same day The Queen and the Duke of Edinburgh embarked for a State visit to Italy, landing at Naples on 3rd May. They embarked again at Ancona on 5th May and landed at Venice for a private visit. Wearing the standard of the Duke of Gloucester, the *Britannia* then sailed for Athens for the ceremony of the unveiling of the Athens War Memorial arranged by the Commonwealth War Graves Commission. The Duke and Duchess of Gloucester disembarked at Suda Bay, after visits in the Eastern Mediterranean, to return to the United Kingdom by air.

The Duchess of Kent, Chief Commandant, inspected units of the Women's Royal Naval Service at H.M.S. *Fulmar*, Lossiemouth, on 16th May.

Honours and Awards

The following were included in the Birthday Honours on 10th June:—

G.C.B.—Admiral Sir J. Peter L. Reid, K.C.B., C.V.O.

K.C.B.—Vice-Admiral Sir Charles E. Madden, Bt., C.B.; Vice-Admiral Royston H. Wright, C.B., D.S.C.

C.B.—Rear-Admiral T. L. Eddison, D.S.C.; Rear-Admiral J. B. Frewen; Rear-Admiral D. H. F. Etherington, D.S.C.; Rear-Admiral A. R. Hezlet, D.S.O., D.S.C.; Rear-Admiral F. H. E. Hopkins, D.S.O., D.S.C.; Rear-Admiral V. St. C. L. Magniac; Rear-Admiral C. B. Pratt; Rear-Admiral A. A. F. Talbot, D.S.O.; Rear-Admiral W. G. S. Tighe.

C.V.O.—Captain N. E. F. Dalrymple-Hamilton, M.V.O., M.B.E., D.S.C.

K.B.E.—Vice-Admiral Nicholas A. Copeman, C.B., D.S.C.; Rear-Admiral Kenneth R. Buckley.

The following appeared in *The London Gazette* on 30th May:—

C.V.O.—Captain S. R. Le H. Lombard-Hobson, O.B.E. (4th May, 1961).

Board of Admiralty

Patent.—The Queen has been pleased by Letters Patent under the Great Seal bearing date the 1st day of April, 1961, to appoint the following to be Commissioners for executing the Office of Lord High Admiral of the United Kingdom:—

Major the Right Hon. Peter A. R. Baron Carrington, K.C.M.G., M.C. (R.A.R.O.).
Admiral Sir Caspar John, G.C.B.
Vice-Admiral Sir St. John R. J. Tyrwhitt, Bt., K.C.B., D.S.O., D.S.C.
Admiral Sir J. Peter L. Reid, K.C.B., C.V.O.
Vice-Admiral John M. Villiers, C.B., O.B.E.
Vice-Admiral Varyl C. Begg, C.B., D.S.O., D.S.C.
Vice-Admiral Sir Laurence G. Durlacher, K.C.B., O.B.E., D.S.C.
Wing Commander Charles I. Orr-Ewing, O.B.E.
Sir Clifford G. Jarrett, K.B.E., C.B.

SECOND SEA LORD.—Vice-Admiral Sir Royston H. Wright, K.C.B., D.S.C., to be a Lord Commissioner of the Admiralty, Second Sea Lord and Chief of Naval Personnel, in succession to Vice-Admiral Sir St. John R. J. Tyrwhitt, Bt., K.C.B., D.S.O., D.S.C. (September, 1961).

MINISTRY OF TRANSPORT

MERCHANT SHIPPING.—It was announced on 26th April that Vice-Admiral John Hughes-Hallett, C.B., D.S.O., M.P., had been appointed to the Ministry of Transport as a new Parliamentary Secretary with special responsibility for shipping and shipbuilding.

FLAG APPOINTMENTS

MALTA.—Commodore the Viscount Kelburn, D.S.C., to be promoted to Rear-Admiral (7th July, 1961) and to be Flag Officer Malta, in succession to Rear-Admiral D. H. F. Hetherington, D.S.C. (July, 1961).

SCOTLAND.—Rear-Admiral A. R. Hezlet, C.B., D.S.O., D.S.C., to be Flag Officer, Scotland, in succession to Vice-Admiral Sir Royston H. Wright, K.C.B., D.S.C. (September, 1961). The appointment of F.O., Scotland, carries with it the N.A.T.O. appointments of Commander Northern Sub-Area, Eastern Atlantic Area, Allied Command Atlantic (Comnorlant), and Commander Nore Sub-Area, Allied Command Channel (Comnorechan).

FLYING TRAINING.—Rear-Admiral P. D. Gick, O.B.E., D.S.C., to be Flag Officer, Flying Training, in succession to Rear-Admiral F. H. E. Hopkins, C.B., D.S.O., D.S.C. (October, 1961).

TRAINING DEPARTMENT.—Rear-Admiral S. E. Post to be Director, Engineering and Electrical Training Division, Training Department, Admiralty, in succession to Rear-Admiral K. R. Buckley, and to be Deputy Chief Naval Engineering Officer (17th August, 1961).

PORTSMOUTH.—Captain F. Dossor to be promoted to Rear Admiral (7th July, 1961) and to be Chief Staff Officer (Technical) on the staff of the Commander-in-Chief, Portsmouth, and for duty with the Commander-in-Chief, Home Station (designate), and Command Electrical Officer, Portsmouth, in succession to Rear-Admiral Post (July, 1961).

HASLAR HOSPITAL.—Surgeon Captain D. D. Steele-Perkins, C.V.O., to be promoted to Surgeon Rear-Admiral on appointment to the Royal Naval Hospital, Haslar (23rd June), and to succeed Surgeon Rear-Admiral G. Phillips, C.B., Q.H.S., on 30th June, 1961, as Command Medical Officer on the staff of the Commander-in-Chief, Portsmouth, and as Medical Officer-in-Charge of the Hospital.

COMMODORE, R.N.R.—Captain J. G. Young, D.S.C., V.R.D., R.N.R., has been appointed Commodore, Royal Naval Reserve, from 1st November, 1961, in succession to Commodore C. P. C. Noble, D.S.C., V.R.D., R.N.R.

RETIREMENTS AND PROMOTIONS

Admiral Sir Robin Durnford-Slater, K.C.B., placed on the Retired List (12th April, 1961).

Vice-Admiral Sir Laurence Durlacher, K.C.B., O.B.E., D.S.C., promoted to Admiral (12th April, 1961).

Rear-Admiral J. Y. Thompson, C.B., placed on the Retired List (23rd February, 1961).

Rear-Admiral J. G. Hamilton, C.B., C.B.E., promoted to Vice-Admiral (12th April, 1961).

Rear-Admiral the Earl Cairns, C.B., placed on the Retired List (21st July, 1961).

Rear-Admiral E. N. V. Currey, C.B., D.S.O., D.S.C., placed on the Retired List (25th May, 1961).

Rear-Admiral R. E. Portlock, C.B., C.B.E., placed on the Retired List (16th June, 1961).

Rear-Admiral M. S. Townsend, C.B., D.S.O., O.B.E., D.S.C., placed on the Retired List (7th July, 1961).

Surgeon Rear-Admiral D. F. Walsh, C.B., O.B.E., placed on the Retired List (16th June, 1961).

Major-General J. L. Moulton, C.B., D.S.O., O.B.E., R.M., placed on the Retired List (2nd October, 1961).

Half-Yearly Lists

The following promotions are announced to date 7th July, 1961:—

To Rear-Admiral.—Captain H. R. Law, O.B.E., D.S.C.; Captain P. D. Gick, O.B.E., D.S.C.; Captain R. A. J. Owen.

The following promotions have been made to date 30th June, 1961:—

General List: Seaman Specialists—Commander to Captain.—D. V. Morgan, M.B.E., E. G. Brown, P. R. C. Higham, M. N. Lucey, D.S.C., C. B. H. Wake-Walker, R. F. Plugge, D.S.C., T. L. Martin, R. C. C. Greenlees, P. S. Beale, C. B. Fetherston-Dilke, J. A. Templeton-Cotill.

General List: Engineer Specialists—Commander to Captain.—R. H. Webber, K. R. Hickson, A.F.C. (Acting Captain), J. E. Dyer-Smith (Acting Captain), F. T. Healy, A. C. W. Wilson.

General List: Supply and Secretariat Specialists—Commander to Captain.—R. P. Peter, O.B.E., J. P. K. Harkness, C. C. H. Dunlop (Acting Captain).

General List: Electrical Specialists—Commander to Captain.—A. F. Caswell, H. R. Wykeham-Martin.

Instructor Branch: Instructor Commander to Instructor Captain.—J. R. Thorp, O.B.E.

Medical Branch: Surgeon Commander to Surgeon Captain.—R. McM. Latta, P. O'Brien, E. B. Martin, O.B.E.

Royal Marines: Lieutenant-Colonel to Colonel.—F. N. Grant, D. B. Drysdale, D.S.O., O.B.E.

Major to Lieutenant-Colonel.—R. W. O'N. Collis, B. I. S. Gourlay, O.B.E., M.C., R. P. Carter, M.C.

Royal Australian Navy: Seaman Specialists—Commander to Captain.—A. N. Dollard, D.S.C., G. V. Gladstone, D.S.C., B. S. Murray (all Acting Captains).

Electrical Specialists—Commander to Captain.—R. R. W. Humbley.

Supply and Secretariat Specialists—Commander to Captain.—F. E. Irvine (Acting Captain).

Royal Naval Reserve: Seaman Branch—Commander, R.N.R., to Captain, R.N.R.—I. J. L. Lang, R.D., J. A. R. Mortimer, C. A. McKeown, R. R. Joicey, G.M., V.R.D., H. E. Smith, D. J. Marshall, V.R.D.

Medical Branch: Surgeon Commander, R.N.R., to Surgeon Captain, R.N.R.—W. S. Parker, V.R.D.

Royal Australian Naval Reserve: Seaman Specialist—Commander to Captain.—B. L. Dechaineux, O.B.E.

Royal New Zealand Naval Reserve: Commander to Captain.—J. A. Kirk.

ARMY NOTES

H.M. The Queen

The Queen presented a new Guidon to The Duke of Lancaster's Own Yeomanry at Belle Vue Stadium, Manchester, on 24th May.

The Queen, accompanied by the Duke of Edinburgh (Colonel, Welsh Guards) and the Duke of Gloucester (Colonel, Scots Guards), was present at The Queen's Birthday Parade on Horse Guards Parade on 10th June.

The Queen, as Colonel-in-Chief, presented new Colours to the 7th Battalion and the 8th (Argyllshire) Battalion, The Argyll and Sutherland Highlanders (Princess Louise's), T.A., at Stirling Castle on 3rd July.

The Duke of Gloucester, Colonel-in-Chief, The Gordon Highlanders, presented new Colours to the 1st Battalion of the Regiment at Celle, West Germany, on 12th April.

The Duke of Gloucester reviewed the Scots Guards on Horse Guards Parade on 29th May on the occasion of His Royal Highness's 25th year as Colonel of the Regiment.

The Duke of Gloucester, on behalf of The Queen, presented a Guidon to the 10th Royal Hussars (P.W.O.), of which Regiment His Royal Highness is Colonel-in-Chief, at Sennelager, Germany, on 30th June.

The Princess Royal, Colonel-in-Chief, The Royal Scots (The Royal Regiment), opened the Regimental museum at The Castle, Edinburgh, on 29th April.

The Queen has been graciously pleased to approve the following appointments:—

H.M. Olav V, King of Norway, as Honorary Colonel, 308th (Suffolk and Norfolk Yeomanry) Field Regiment, R.A., T.A., on formation (1st May, 1961).

H.R.H. the Duchess of Kent as Honorary Colonel, 299th (Royal Buckinghamshire Yeomanry, Queen's Own Oxfordshire Hussars and Berkshire) Field Regiment, R.A., T.A., on formation (1st May, 1961).

To be Aides-de-Camp to The Queen.—Brigadier G. R. Turner-Cain, D.S.O. (6th April, 1961), vice Brigadier F. P. Barclay, D.S.O., M.C., retired; Colonel R. F. Hawker, D.S.O., O.B.E., T.D. (29th April, 1961), vice Colonel W. Q. Roberts, C.B.E., D.S.O., M.V.O., T.D., J.P., D.L., tenure expired; Brigadier H. R. L. Hodges (29th April, 1961), vice Brigadier D. A. K. W. Block, D.S.O., M.C., retired; Brevet Colonel A. J. Page, T.D., D.L. (16th May, 1961), vice Colonel A. S. Pearson, C.B., D.S.O., O.B.E., M.C., T.D., D.L., tenure expired; Colonel R. D. Martin-Bird, O.B.E., T.D. (11th June, 1961), vice Colonel (Honorary Brigadier) D. V. Phelps, T.D., J.P., D.L., M.A., tenure expired; Colonel W. L. Mather, O.B.E., M.C., T.D. (11th June, 1961), vice Colonel (Honorary Brigadier) D. I. Crawford, C.B., D.S.O., T.D., D.L., tenure expired.

To be Honorary Physician to The Queen.—Colonel H. A. Mullen, T.D., M.B., Ch.B. (21st March, 1961), vice Colonel J. H. Prain, T.D., M.B., tenure expired.

To be Honorary Surgeons to The Queen.—Major-General W. J. Officer, C.B.E., M.B. (27th January, 1961), vice Major-General G. T. L. Archer, C.B., M.B., F.R.C.P.(I.), retired; Brigadier L. R. S. MacFarlane, O.B.E., M.D. (15th March, 1961), vice Brigadier C. M. Marsden, C.B.E., M.B., F.R.C.S.(E.), retired; Colonel G. A. W. Neill, T.D., M.D., D.P.H. (21st March, 1961), vice Colonel R. G. W. Ollerenshaw, T.D., B.M., D.M., R.D., tenure expired; Brigadier (Temporary Major-General) L. T. Furnivall, D.S.O., M.R.C.S., L.R.C.P. (3rd May, 1961), vice Lieut.-General Sir W. Alexander Drummond, K.B.E., C.B., LL.D., F.R.C.S., L.R.C.P., D.L.O., retired; Brigadier T. M. R. Ahern, C.B.E., M.B. (26th May, 1961), vice Major-General F. McL. Richardson, C.B., D.S.O., O.B.E., M.D., retired.

To be Chief Royal Engineer.—General Sir Frank Simpson, G.B.E., K.C.B., D.S.O. (5th March, 1961), vice the late General Sir Kenneth Crawford, K.C.B., M.C.

To be Colonels Commandant.—Of the Royal Regiment of Artillery, Lieut.-General Sir Geoffrey Thompson, K.B.E., C.B., D.S.O. (25th May, 1961), vice Major-General M. W. M. MacLeod, C.B., C.B.E., D.S.O., tenure expired; of the Corps of Royal Engineers, Major-General Sir Henry Sugden, K.B.E., C.B., D.S.O. (29th May, 1961), vice Major-General N. A. Coxwell-Rogers, C.B., C.B.E., D.S.O., tenure expired, and Lieut.-General Sir John Cowley, K.B.E., C.B., A.M. (7th June, 1961), vice General Sir John Whiteley, G.B.E., K.C.B., M.C., tenure expired.

To be Colonels of Regiments.—Of the 9th/12th Royal Lancers (Prince of Wales's), Major (Honorary Lieut.-Colonel) G. H. Grosvenor, D.S.O. (18th May, 1961), vice General Sir Richard McCreery, G.C.B., K.B.E., D.S.O., M.C., tenure expired; of The King's Own Royal Border Regiment, Lieut.-General R. N. Anderson, C.B., C.B.E., D.S.O. (31st May, 1961), vice Major-General V. Blomfield, C.B., D.S.O.; of The Worcestershire Regiment, Colonel (Honorary Brigadier) D. H. Nott, D.S.O., O.B.E., M.C. (20th April, 1961), vice General Sir Richard Gale, G.C.B., K.B.E., D.S.O., M.C., tenure expired.

Honours and Awards

The following were included in The Queen's Birthday Honours List:—

G.C.B.—General Sir Richard Hull, K.C.B., D.S.O.

K.C.B.—Lieut.-General R. N. Anderson, C.B., C.B.E., D.S.O.; Lieut.-General W. G. H. Pike, C.B., C.B.E., D.S.O.

C.B.—Major-General H. T. Alexander, C.B.E., D.S.O.; Major-General W. A. G. Burns, D.S.O., O.B.E., M.C.; Major-General H. M. Campbell, C.B.E.; Major-General C. I. H. Dunbar, C.B.E., D.S.O.; Major-General G. R. D. Fitzpatrick, D.S.O., M.B.E., M.C.; Major-General N. L. Foster, D.S.O.; Major-General D. S. Gordon, C.B.E., D.S.O.; Major-General C. H. P. Harington, C.B.E., D.S.O., M.C.; Major-General the Lord Thurlow, C.B.E., D.S.O.; Major-General R. E. Wade, C.B.E., Australian Staff Corps.

K.B.E.—Major-General R. Delacombe, C.B., C.B.E.; Lieut.-General R. G. Pollard, C.B., C.B.E., D.S.O., Australian Staff Corps.

Royal Red Cross, First Class.—Temporary Lieut.-Colonel Margaret M. Trood, Q.A.R.A.N.C.

Appointments

War Office.—Major-General E. S. H. Bates, O.B.E., M.C., appointed Director, Royal Artillery (8th May, 1961).

Lieut.-General Sir William Stirling, K.C.B., C.B.E., D.S.O., appointed Military Secretary to the Secretary of State for War (19th June, 1961).

Major-General A. P. W. Hope, C.B., C.B.E., appointed Director of Equipment Policy (19th June, 1961).

Colonel J. E. Rivett-Drake, M.B.E., W.R.A.C., appointed Director, Women's Royal Army Corps (August, 1961).

Brigadier A. R. Fyler, O.B.E., appointed Director of Personnel Administration, with the temporary rank of Major-General (September, 1961).

General Sir Cecil Sugden, G.B.E., K.C.B., A.D.C.(Gen.), appointed Master-General of the Ordnance (early, 1962).

United Kingdom.—Brigadier L. T. Furnivall, D.S.O., M.R.C.S., L.R.C.P., appointed Deputy Director of Medical Services, Eastern Command, with the temporary rank of Major-General (5th April, 1961).

Lieut.-General E. D. Howard-Vyse, C.B., C.B.E., M.C., appointed G.O.C.-in-C., Western Command (15th May, 1961).

Major-General C. H. P. Harington, C.B., C.B.E., D.S.O., M.C., appointed Commandant, Staff College, Camberley (October, 1961).

Brigadier J. D. Frost, D.S.O., M.C., appointed G.O.C. 52nd (Lowland) Division and District, with the temporary rank of Major-General (October, 1961).

Brigadier V. W. Street, C.B.E., D.S.O., M.C., appointed G.O.C. 3rd Division, with the temporary rank of Major-General (October, 1961).

Lieut.-General Sir Roderick McLeod, K.C.B., C.B.E., appointed G.O.C.-in-C., Eastern Command (December, 1961).

Major-General J. F. Metcalfe, C.B., C.B.E., appointed G.O.C. Aldershot District, in succession to Major-General D. S. S. O'Connor, C.B., C.B.E.

GERMANY.—Major-General A. N. T. Meneces, C.B.E., D.S.O., Q.H.P., M.D., F.R.C.P., appointed Director of Medical Services, B.A.O.R. (6th March, 1961).

Major-General D. G. Moore, C.B., appointed Chief, Joint Services Liaison Staff, Joint Services Liaison Organisation, B.A.O.R. (August, 1961).

MIDDLE EAST LAND FORCES (ADEN).—Major-General J. A. R. Robertson, C.B., C.B.E., D.S.O., appointed G.O.C. (28th May, 1961). Substituted for the notification in the February, 1961, JOURNAL.

FAR EAST LAND FORCES.—Major-General R. H. Hewetson, C.B., C.B.E., D.S.O., appointed Commander, British Forces, Hong Kong, with the temporary rank of Lieut.-General, in succession to Lieut.-General Sir Roderick McLeod, K.C.B., C.B.E.

ALLIED FORCES, NORTHERN EUROPE.—Major-General C. H. Tarver, C.B., C.B.E., D.S.O., appointed Chief of Staff to the C.-in-C. (October, 1961).

PROMOTIONS

Temporary Lieut.-Generals or Major-Generals to be Lieut.-Generals.—C. L. Richardson, C.B., C.B.E., D.S.O., B.A. (27th February, 1961); W. F. R. Turner, C.B., D.S.O. (11th April, 1961); H. E. Knott, C.B., O.B.E., Q.H.P., M.D., D.P.H. (3rd May, 1961); E. D. Howard-Vyse, C.B., C.B.E., M.C. (15th May, 1961).

Temporary Major-Generals, Brigadiers, or Colonels to be Major-Generals.—H. J. Mogg, C.B.E., D.S.O. (10th February, 1961); G. F. de Gex, O.B.E. (14th February, 1961); W. M. Hutton, C.B.E., D.S.O., M.C. (17th February, 1961); R. A. Fyffe, D.S.O., O.B.E., M.C. (27th February, 1961); R. H. Farrant (1st March, 1961); I. H. Freeland, D.S.O. (18th March, 1961); W. Odling, O.B.E., M.C. (23rd April, 1961); W. A. Robinson, O.B.E., Q.H.S., M.D. (3rd May, 1961); E. J. H. Bates, O.B.E., M.C. (8th May, 1961); H. J. C. Hildreth, C.B.E. (20th May, 1961); L. T. Furnivall, D.S.O., Q.H.P., M.R.C.S., L.R.C.P. (26th May, 1961).

Brigadiers or Colonels to be temporary Major-Generals.—L. T. Furnivall, D.S.O., M.R.C.S., L.R.C.P. (5th April, 1961).

RETIREMENTS

The following General Officers have retired:—Major-General E. S. Lindsay, C.B., C.B.E., D.S.O. (1st May, 1961); Lieut.-General Sir W. Alexander Drummond, K.B.E., C.B., LL.D., F.R.C.S., L.R.C.P., D.L.O. (3rd May, 1961); Lieut.-General Sir George Collingwood, K.B.E., C.B., D.S.O. (9th May, 1961); Major-General G. O. Crawford, C.B., C.B.E. (20th May, 1961); Major-General E. S. Cole, C.B., C.B.E. (25th May, 1961); Major-General F. McL. Richardson, C.B., D.S.O., O.B.E., M.D. (26th May, 1961); Major-General A. E. Brocklehurst, C.B., D.S.O. (20th June, 1961).

AIR NOTES

H.M. The Queen

Air Commodore (Acting Air Vice-Marshal) T. C. MacDonald, A.F.C., M.D., Ch.B., D.P.H., is appointed Honorary Physician to The Queen in succession to Air Commodore G. W. McAleer, C.B.E., M.B., B.Ch., D.T.M. & H. 31st May, 1961.

Air Vice-Marshal S. R. C. Nelson, O.B.E., M.D., M.C.P. & S., is appointed Honorary Physician to The Queen in succession to Air Vice-Marshal J. Hill, C.B.E., M.B., Ch.B., D.P.H., 27th June, 1961.

Honours and Awards

The following were included in The Queen's Birthday Honours List:—

K.C.B.—Air Marshal R. B. Lees, C.B., C.B.E., D.F.C.

C.B.—Air Vice-Marshal C. Broughton, C.B.E.; Air Vice-Marshal B. K. Burnett, D.F.C., A.F.C.; Air Vice-Marshal C. H. Hartley, C.B.E., D.F.C., A.F.C.; Air Vice-Marshal T. U. C. Shirley, C.B.E., M.I.E.E., F.R.Ae.S.; Air Vice-Marshal F. S. Stapleton, D.S.O., D.F.C.; Air Vice-Marshal P. G. Wykeham, D.S.O., O.B.E., D.F.C., A.F.C.; Acting Air Vice-Marshal B. A. Chacksfield, O.B.E.; Air Commodore W. M. King, C.B.E.

K.B.E.—Acting Air Marshal J. Grandy, C.B., D.S.O.

D.B.E.—Air Commandant Anne Stephens, M.B.E., A.D.C.

Appointments

Air Vice-Marshal J. G. W. Weston, C.B., O.B.E., as Director-General of Manning, Air Ministry (18th July, 1961); Air Commodore C. M. Stewart, C.B.E., as Director-General of Signals, Air Ministry (5th June, 1961); Air Vice-Marshal T. A. B. Parselle as Deputy Air Secretary, Air Ministry (September, 1961); Air Vice-Marshal G. C. Eveleigh, O.B.E., as Air Officer, Administration, Fighter Command (1st July, 1961); Air Commodore S. W. B. Menaul, C.B.E., D.F.C., A.F.C., as Senior Air Staff Officer, Bomber Command, with the acting rank of Air Vice-Marshal (21st July, 1961); Air Vice-Marshal G. A. Walker, C.B., C.B.E., D.S.O., D.F.C., A.F.C., as Air Officer Commanding-in-Chief, Flying Training Command, with the acting rank of Air Marshal (24th September, 1961); Air Commodore T. N. Coslett, O.B.E., as Air Officer Commanding No. 24 Group, Technical Training Command, with the acting rank of Air Vice-Marshal (27th July, 1961); Air Vice-Marshal T. C. MacDonald, A.F.C., M.D., Ch.B., D.P.H., as Principal Medical Officer, Technical Training Command (25th May, 1961); Air Marshal Sir Hugh Constantine, K.B.E., C.B., D.S.O., as Commandant, Imperial Defence College (September, 1961); Air Commodore P. T. Philpott, C.B.E., as Senior Directing Staff, Imperial Defence College, with the acting rank of Air Vice-Marshal (19th May, 1961); Air Commodore D. F. Spotswood, C.B., C.B.E., D.S.O., D.F.C., A.D.C., as Assistant Chief of Staff, Air Defence Division, Supreme Headquarters, Allied Powers Europe, with the acting rank of Air Vice-Marshal (5th June, 1961); Air Marshal Sir Douglas Jackman, K.B.E., C.B., as Chief Co-ordinator of the Anglo-American Community Relations Scheme in the United Kingdom.

Promotions

Air Marshal Sir Walter Merton, K.C.B., O.B.E., is promoted to the rank of Air Chief Marshal (1st June, 1961).

The following half-yearly promotions are dated from 1st July, 1961:—

General Duties Branch

Air Vice-Marshal to Air Marshal.—Sir Kenneth Cross.

Air Commodore to Air Vice-Marshal.—P. T. Philpott, F. E. Rosier, E. G. Jones, D. F. Spotswood.

Group Captain to Air Commodore.—F. J. Manning, B. P. Young, W. Pitt-Brown, R. E. Craven, C. N. Foxley-Norris, D. G. Smallwood, J. Barraclough, P. C. Fletcher.

Wing Commander to Group Captain.—D. G. H. Spencer, A. D. Panton, T. Balmforth, G. B. Johns, G. H. Westlake, C. S. West, J. L. Mitchell, G. F. Reid, J. A. Sowrey, R. N. G. Allen, R. S. Boast, A. F. Wallace, J. Finch, K. G. Hubbard, L. A. Malins, K. W. T. Pugh, A. C. L. Mackie, F. R. L. Mellersh, D. Bower, P. A. Kennedy, P. W. Helmore, L. C. Lambert.

Technical Branch

Air Vice-Marshal to Air Marshal.—Sir Leslie Dalton-Morris.

Group Captain to Air Commodore.—T. E. J. Fitton, F. E. Tyndall, S. W. Lane.

Wing Commander to Group Captain.—A. H. Hewitt, W. E. French, J. E. Frith, E. D. Smith, C. T. Nance, N. Hermiston.

Equipment Branch

Group Captain to Air Commodore.—K. T. Nicklin.

Wing Commander to Group Captain.—H. E. Barker, H. T. Morgan.

Secretarial Branch

Group Captain to Air Commodore.—G. L. Seabrook.

Wing Commander to Group Captain.—E. P. Appleton, E. L. Frith.

Education Branch

Wing Commander to Group Captain.—A. D. Button.

Retirements

Air Chief Marshal Sir Harry Broadhurst, G.C.B., K.B.E., D.S.O., D.F.C., A.F.C. (at own request) (1st March, 1961); Air Commodore W. P. Sutcliffe, C.B., D.F.C. (16th April, 1961); Air Vice-Marshal Sir Geoffrey L. Worthington, K.B.E., C.B. (12th April, 1961); Air Commodore D. F. Macdonald (3rd April, 1961); Air Commodore J. Magner, M.D., B.Ch. (5th May, 1961); Air Vice-Marshal W. C. Sheen, C.B., D.S.O., O.B.E. (13th May, 1961); Air Vice-Marshal W. J. Crisham, C.B., C.B.E. (2nd June, 1961); Air Commodore G. W. McAleer, C.B.E., Q.H.P., M.B., B.Ch., D.T.M. & H. (1st June, 1961).

REVIEWS OF BOOKS

GENERAL

The Supreme Command, 1914-1918. By Lord Hankey. (Allen and Unwin.) Two Volumes. 84s.

In February, 1912, Lord Hankey, aged 35, became Secretary to the Committee of Imperial Defence after 17 years' service in the Royal Marine Artillery (1895–1901), the Naval Intelligence Department (1902–1906), and various inter-departmental defence committees, wide-ranging in scope and of considerable importance. Thereafter, until his retirement in 1938, Lord Hankey, raised to the peerage in 1939, dwelt at the centre of the supreme command of the British Imperial defence system, its heart and perhaps also its soul. His selection was no accident. Lord Fisher, no mean judge of a man's ability, wrote in 1906: "There is a captain of Marines called Hankey serving in the Mediterranean Fleet. He has a large forehead, bulging with brains. He has been created by God Almighty for the express discomfiture of Kaiser Wilhelm II. Get him to the C.I.D. as soon as you can." Thus it was that Hankey became assistant secretary in 1908.

How right Lord Fisher was is best expressed in the words of Sir Edward Spears: "Of all Cabinets, of all Prime Ministers, equally trusted, attending every meeting, where he took down everything in longhand, prepared minutes, and dealt with every conceivable matter with the industry of a Continental housemaid, he was never ruffled, never out of temper. I have often thought in the next world he will certainly be selected to help St. Peter in his arduous duties. He will put difficult questions so as to cause the minimum of embarrassment, and always he will be writing in longhand, in an enormous book." Fortunately for us all, this last appointment has been postponed to permit Lord Hankey to write the present 'enormous book' which both expresses his philosophy of the Supreme Command under the British Constitution and describes the evolution of the principles of supreme command in the stress and chaos of the 1914–18 War. Part memoir and part treatise, these admirable books reveal the transactions of the Supreme Command throughout the first World War as seen by a clear, dispassionate mind, at once involved and detached. They add enormously to our understanding of the conflict.

Lord Hankey makes it abundantly clear that the Supreme Command is, and of its very nature must be, political. For this reason his study is dedicated to the memory of three supreme commanders and Prime Ministers, Lord Balfour, creator of the Committee of Imperial Defence, Lord Asquith, who developed the C.I.D. in peace and for war direction, and, most supremely, Lord Lloyd George, who perfected the C.I.D. in the form of the War Cabinet as an instrument of victory. This, as the considered opinion of one who was the most unpolitical of mortals and yet could serve with equal detachment and devotion a succession of political supreme commanders without involving himself in the bitterness of their internal political and personal conflicts, is the vital lesson of this study, which all who in the profession of arms serve the cause of democracy in peace and war must comprehend and absorb.

In a sense, Lord Hankey's present contribution completes a series of important books on this subject, Lord Ismay's *Memoirs* and Professor Johnson's *Defence by Committee*, since all three deal with the practice and principle of supreme command from the C.I.D. angle which is the point where political factors meet and merge with non-political execution. Here the man of State must interlock with the man of war in the topmost councils, whether for preparation and prescience or for action in the event, and the ultimate decision for good or ill must lie with the political chief who alone controls and directs the great spiritual and material forces of democracy. Professor Johnson has shown how the system over which Lord Hankey was placed in 1912, has become, inevitably, the politico-military system under which, at the present time, Western democracy conducts the business of war. Lord Hankey now reveals in intimate,

compassionate detail how this all evolved between 1912 and 1918 in the roaring fiery furnace of the first World War.

When, on 14th July, 1914, Hankey's brain child, the War Book, designed to secure a smooth transition from peace to war, was finally approved " without discussion " and there was still " no hint of a European crisis," Hankey was authorized by the Foreign Office " to tell the King that he hoped and believed there would be no occasion to put the War Book in operation." " Within a week of this meeting the first stage of the War Book . . . intended to safeguard the country against being caught unawares, was in full operation "—it was as close a thing as that. But, with the advent of war itself, Colonel Hankey might well consider that the work of the C.I.D., and himself as its head, would be superseded by the Cabinet, the Service Ministries, and the Service chiefs and commanders by sea and land. This was not to be. Hankey was swept into the vortex at the Prime Minister's elbow in a position as novel as it was unanticipated, military mentor to the Prime Minister and the Cabinet. The system in which Hankey now found himself involved had no system at all; decisions were made haphazard, and ardent, able minds, Churchill, Lloyd George, Kitchener, the Prime Minister himself, did their unco-ordinated best to fit a 19th century procedure to 20th century war. In this context, Chapters xxvi and xxvii in Vol. I, which describe the incredible politico-strategical chaos involving the War Council, the Foreign Office, the Admiralty, and the War Office, in which Allied intervention in the Balkans and the Dardanelles was conceived, are among the most important in the two volumes. Hankey's was the one clear mind. His lucid memoranda, designed to force the Admiralty and the War Office to face the strategical and tactical factors before becoming hopelessly committed to the unforeseen, foreshadow the essential duties now fulfilled by the Chief of Staff to the Minister of Defence—there is little evidence that Hankey's intervention at that time received the attention it deserved. (It is tragic to recall that much the same muddle attended the British expedition to Greece in the early summer of 1941.)

Out of this chaos came the long series of disasters and disillusionments which culminated in the retreat from the Dardanelles and the unsatisfactory first coalition government under Asquith of 1915 and 1916. Hankey's impressions, interventions, and experiences through this dark period, including a personal visit of discovery to the Dardanelles battlefields, are fascinating in their own right; more important to the study of the Supreme Command is his description of its evolution through error and trial to the political crisis of December, 1916, when Lloyd George intervened and the first coalition Government, headed by Asquith, fell from power. In that year the flower of Britain's manhood perished on the Somme battlefields. All the combatants were bleeding themselves white, and victory seemed infinitely remote.

Lloyd George came in, Asquith went out, but Hankey remained, and, with Hankey at his elbow, Lloyd George established a system of supreme command which Hankey terms " Dictatorship in Commission." These two suited each other supremely well. Each sought a peripheral strategical solution only to be brought up against the hard fact that Germany might, and in the event almost did, win the war in France and Flanders. Together they went through the agony of Passchendaele, the collapse of Russia, defeat in Italy, and the struggle to establish a co-ordinated command in France. The tide turned, at last, in July, 1918, at the moment when the Supreme Command had decided to remove Haig; much as Auchinleck was removed in August, 1942.

Hankey, on another plane of action, did much to assist the development of " the most important factor on land—the tank." Moreover he, more than anybody, was responsible for pressing on a reluctant Admiralty the convoy system which defeated the German submarine campaign. It is this quiet, unassertive ubiquity, devoid of vanity or ambition, this power to divert and direct without friction or distrust, which made Hankey, in himself, the prototype of future developments such as the Chiefs of Staff Committee and the Joint Planning organization. In the first World War, Hankey, himself, was each of these organizations in embryo.

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FABER AND FABER LIMITED

The Art of War: From the Age of Napoleon to the Present Day. By Cyril Falls. (Oxford University Press.) 8s. 6d.

Professor Falls has written this small volume as a contribution to the Home University Library of Modern Knowledge. It is in no sense a military history, but an analysis for the general reader showing how, during the period since Napoleonic times, armies, navies, and later air forces, were handled. It therefore deals mainly with leadership, training, strategy, tactics, equipment, and weapons. The author has chosen to start with the Napoleonic era because it marked the change-over from wars fought between Sovereigns to that of popular wars, i.e. struggles between nation and nation. The theory of war is reduced to the simplest terms and expounded only so far as is necessary to explain the aims and actions of the governments and commanders concerned.

The author covers so wide a field and touches on so many wars—great and small—that it would be invidious to pick out any particular campaign for special mention. Suffice it to say that he uses them to illustrate the effect of the evolution of new weapons and equipment on strategy and tactics. For example, he argues that the tactics of the North African campaign might well be applied—in part at any rate—to central and western European conditions today, by equipping infantry with tracked armoured vehicles, thus enabling them to attain the same flexibility of movement and such measure of protection against tactical atomic weapons as are afforded to armoured formations.

In a short chapter on nuclear warfare, whilst not underestimating the enormous problems of defence—in particular civil defence—in this tightly packed country, as compared with the U.S.A. and U.S.S.R., he arrives at the conclusion that preparations to meet a nuclear attack are "still not without profit. Forethought is seldom wasted and is most unlikely to be wasted here. All human lives and most of the work of men's

hands that can be saved are worth saving. It is a national duty to save them. Despair is not a policy."

On the subject of naval warfare he deduces that navies will still play a vital role—even in a total nuclear war—in the struggle for trade routes. But he concludes that the Royal Navy has been reduced to such a low level that it would not be " capable of playing a creditable and effective part against submarines in warfare."

This is an absorbing and important book by an acknowledged expert.

The Control of the Arms Race. By Hedley Bull. (Weidenfeld and Nicolson for the Institute for Strategic Studies.) 21s.

Strategy and Arms Control. By T. C. Schelling and Morton A. Halperin. (Twentieth Century Fund, N.Y.) $2.50.

The academic strategists on each side of the Atlantic have now turned their attention to arms control, and both these books originated from discussions by defence ' study groups.' The British version by Hedley Bull is the second major study in international security to be published on behalf of the Institute for Strategic Studies and is a thorough analysis of the strategic background of the existing politico-military situation. At the same time as it was being written, the American authors, who are members of Harvard University's Centre for International Affairs, were also taking part in an 'Arms Control Study Group ' and they acknowledge the advantage they gained from seeing a draft of Mr. Bull's book. In these similar circumstances of origin it is not surprising that the books have much in common.

The authors are agreed that arms control should be a form of international agreement related to the character, deployment, or use of arms; it does not necessarily imply a reduction in armaments. Indeed, Hedley Bull's book, recognizing the value of a balance of power in the level of conventional armaments, which would release the Western Powers from their reliance on the threat of initiating nuclear warfare, does not discard the possibility of an increase in Western conventional power, though it might be in weapon standards and mobility rather than numerical strength. The book, however, is not an attempt to urge a particular course of action but examines the possibilities of finding common ground among all the great Powers. It is in the true interest of both sides, however antagonistic, to minimize the costs and risks of arms competition, to avoid ' accidental ' war, and to curtail the scope and violence of war if it occurs. This may be done by agreement on the character or deployment of weapons, for any change which reduces the ability of weapons to achieve advantage by going to war quickly or mitigates the disadvantage of responding slowly may reduce the likelihood of war.

The main function of a military force, the Harvard writers claim, is to influence the behaviour of other countries, not simply to spend itself in destruction. This contention " rests on the recognition that our military relations with potential enemies is not one of pure conflict and opposition, but involves strong elements of mutual interest." There will be less chance of war if the nature of the weapons held by opposing Powers makes a quick decision unlikely and international arms control therefore is essentially a means of supplementing unilateral military strategy by some kind of collaboration with the countries that are potential enemies. To improve the situation we must remove the advantage of surprise by such measures as making deterrents invulnerable, improving intelligence on both sides (open skies, improved inspection, etc.) and developing arms in such a way that they render subsequent disarmament less difficult.

Neither book ignores the great problem of introducing arms control in an age of immense technical progress. We may be able, however, to use this development to advantage by exploiting the value of technical innovations in inspection systems or making use of outer space to aid in dispersal of targets. For the major antagonists,

the demonstration of technical prowess in space is a political objective of major importance, but with agreement and control the innovations might be channelled into improvements in the techniques of evasion and inspection rather than offence and surprise.

The two books are authoritative discussions on the opportunities and potentialities of arms control as a help in relieving our present international difficulties. They consider a solution related to a new balance of power wherein the military forces are acknowledged, but well controlled and invulnerable rather than provocative, so that there will be slighter chance of accidental war and less profit in a deliberate attack.

The Anatomy of Glory: Napoleon and his Guard. Adapted from the French of Henry Lachouque by Anne S. K. Brown. (Brown University Press; London, Lund Humphries.) 100s.

It is hard to give guidance to anyone taking up this monumental mixture of the valuable and the valueless. It is, says the translator, a ' free adaptation ' of Commandant Lachouque's text, from which many names and details have been omitted, but it has been embellished not only by some very useful appendices, but also by 173 really beautifully reproduced plates in colour and half-tone from Mrs. Brown's famous collection.

Commandant Lachouque's work, which received the Prix Muteaux from the Académie Francaise, was evidently based upon good manuscript and other sources, but, alas, it is now impossible to say what is reliable and what is not. The translator herself is no historian, as a glance at the preface will show. It is a pity, she says, that anyone fought Napoleon, otherwise we might now have a European Federation. And when she calls the record of Great Britain in the business—a country which fought France for 20 solid years out of 22—' splendid isolation ' and fishing in troubled waters, could futility go farther? The adaptation cannot fail to suffer.

But—and it is a big but—no one but the most presumptuous who wishes to know about the Imperial Guard can afford to ignore this astonishing compilation. It is undoubtedly based upon a good historical foundation, however one may criticize its presentation. The appendix on the units of the Guard is very valuable, and the notes on the artists whose work is reproduced contains much valuable information not obtainable elsewhere without a good deal of trouble. But it is the illustrations for which we have above all to thank Mrs. Brown. Some are contemporary, some not; some relate to the Guard, some do not; but all are reproduced with a clarity, a beauty, and technical perfection which no one can fail to admire. Some have never been reproduced, and most of the prints come from publications which few will have had an opportunity of seeing before. Even if the whole book were thoroughly bad—and it most certainly is not—most people would be quite happy to have it for these alone.

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The Spanish Civil War. By Hugh Thomas. (Eyre and Spottiswoode.) 55s.

Writers have long been fascinated by the Spanish Civil War, and many writers actually took part in it. Unfortunately, the extensive literature on the subject suffers from one grave defect; almost without exception it has been compiled by 'committed' writers, either of the Left or the Right. Even now the subject is a touchy one, and any mention of the present régime in Spain tends to rouse old emotions. The result has been that disinterested students have been denied the benefit of a factual, dispassionate account of the war, its causes and its progress.

This deficiency has now been remedied. Mr. Thomas's monumental work presents the facts in a calm, dry, and uncommitted manner. It must be said at once that the work suffers from the defects of its virtues. The author tells us what happened, without attempting to place his facts within the framework of a general analysis, and the result hardly makes for easy reading. But this in itself is significant; as the author clearly expounds, Spanish politics were quite incredibly complex, the parties and personalities moved by impulses which would be comprehensible only to a Spaniard. No simple analysis is really possible, and would only mislead if it were attempted.

The main conclusion that the reader will draw will probably be negative. Contrary to the opinion of most writers, the war was not a simple conflict between democracy and fascism. In essence, the war was a struggle between two opposing forces which have always been evident in Spanish history—the centrifugal and the centripetal. There is a greater significance than is generally realized in the fact that the Church—always one of the main unifying forces in Spain—should be on the side of the Nationalists. In this important respect, the reader may draw the conclusion that the main reason for the Nationalist victory was not the aid rendered by Germany and Italy; the Nationalists won because Franco was better able than the Republican leaders to reconcile or discipline the divergent forces on his side (Army, Church, Monarchists, Carlists, Falange). This factor is of the greatest significance for the military student, particularly of higher rank. It is certain that in any future war, a working balance will have to be struck between the differing aims, opinions, and outlook of a wide variety of allies. As might be expected, the author gives to the character of Franco the importance it deserves. Significantly, his attitude to the *putsch* was a matter of conjecture among his colleagues right up to a few weeks before the outbreak of the war; a moderate, calculating man, never much of a general, but a man who never let his heart rule his head, he quickly emerged as the only possible leader for the Nationalists. It is hardly surprising, given his character, that he was able to weld his team together—and to give such stability to his later régime in Spain.

The actual military operations are described in the same dispassionate manner as the political background, but there are few military lessons to be derived at this late date. As might have been expected, discipline told. In the initial stages, the highly trained, well-drilled Regulars made short work of the raw militia opposing them, and advanced to the gates of Madrid. But here an imponderable factor—simple enthusiasm—told heavily. The militia and workers of Madrid, stiffened by the more highly trained International Brigade, and in particular the Communist Fifth Regiment, stemmed the tide. The lesson was obvious, and was quickly learned by the Republic. Even the Anarchists, to whom the whole conception of orders, discipline, and officers was anathema, realized that high-sounding theories are of little military value.

Other lessons were as clearly demonstrated, but, unhappily, ignored by those who should have taken advantage of them. It was quickly discovered that tanks used as a massed striking force, a *Schwerpunkt*, achieved far better results than tanks spread out among infantry. It was also found that even massed tanks need the immediate support of highly mobile infantry; only the Germans took the lesson officially to heart.

The operations on both sides were governed to a remarkable extent by the internal and international political background. For example, a fortuitous shipment of Russian

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tanks enabled the Republic to launch a nasty counterpunch south of Madrid; an Anarchist uprising in Barcelona compromised Republican efforts elsewhere. And Munich, without any doubt, sealed the doom of the Republic. Thereafter, Stalin gave up his attempt to make an alliance with Britain and France. Instead, he concentrated on an alliance with Germany—which meant that Russian aid to the Republic was gradually diminished and finally stopped.

In this important respect, the interlocking of the political and the military, the author might have been more coherent. The narrative jumps confusingly from the fighting front to the in-fighting of the politicians in the rear, from there to, say, the deliberations of the Non-Intervention Committee, or the League of Nations, and from there to a short history of personalities in the International Brigades. The general effect on the reader tends to be exhausting rather than explanatory.

In conclusion, let it be emphasized that this is not a work for the casual reader. But for the professional officer who is prepared to give it careful study and intelligent analysis, it should be of the greatest value.

Who Lived to See the Day: France in Arms 1940-1945. By Philippe de Vomécourt. (Hutchinson.) 25s.

Readers should not be put off this work by the title—which, one suspects, has been perpetrated by the publishers. Nor should they dismiss it as ' another book about the Resistance '; such books tend to follow a pattern, to be over-dramatic, and to present a picture that is at once both over-personal and over-parochial.

M. de Vomécourt's excellent work is none of these. The author was one of the first organizers and initiators of the Resistance, and as such he is able to give us an overall

picture of its work. He traces its growth from the pathetic beginnings in 1940, with men, money, and support very scanty indeed, to the days of the Liberation, when Resistance forces were able to reduce the speed of German motorized convoys to an average of as little as five miles a day.

The author gives us fascinating glimpses of the political background, and does not conceal his impatience with the petty rivalries of the various Resistance groups—rivalries which, although strong in London, were almost unknown in the field. About the Communists he is very scathing indeed, and gives good reasons for being so. For one thing, the Communists seized the opportunities of the Liberation to prosecute a private political war, often executing loyal Resistance men on trumped-up charges of 'collaboration.' Most revealing of all, during a spell of imprisonment at the hands of the Vichy authorities, the author's Communist prison-mates refused to join his plan for a mass escape; they explained that if they escaped they might be killed, and it was their duty to the Party to stay alive until the war was over.

The author is equally critical of the Americans. Initially, the U.S. Command did not appreciate the value of organized resistance, and only lent their support at the eleventh hour. Moreover, shortly after the Battle of France, the Americans were guilty of a quite incredible lack of tact. A large German formation had been prevented from escaping into Switzerland by the Resistance; this did not prevent their committing atrocities on a draconic scale in the villages they passed through *en route*. Finally, when the Germans had been surrounded and rendered helpless by the Resistance, their surrender —on terms—was coolly accepted by the local American Corps commander.

The book is rich in interest, intensely readable, and certainly deserves serious study; in any future war the operations of Resistance groups may play an important part, and the author's experience ranges from top-level contacts to the contributions of the individual Resistance fighters in the field. He has expressed this experience in a remarkably pleasant style, combining authority and modesty. All in all, a book well worth reading.

Salerno. By Hugh Pond. (Kimber.) 30s.

The Battle of Salerno lasted from 9th to 20th September, 1943. Two British and two United States infantry divisions took part. Italy had capitulated and soldiers expected a picnic; they soon found themselves in a full-scale attack.

It is refreshing to sit down to a book on battles written by a Regular officer and one who so well understands the men who did the fighting. Because of the author's own knowledge of our business and his own experiences, he has been able to describe scores of actions, great and small, from which today's soldiers can themselves live in company with these men of Salerno and can learn from their failures and their successes. In these 250 pages there is a treasure-house of instruction.

The book examines the higher planning, the shortage of landing craft with Far East and north-west Europe calling, and the application by 5th U.S. Army—whose General, Mark Clark, commanded the operation—of the means available to the business of forcing a landing on the Salerno beaches. The tension is heightened by the tardy approach of 8th Army from the south to link with the landing force. The author takes 5th Army to task for not employing from the outset the whole of its powerful naval armament to ease the troops ashore.

He speaks of the notorious mutiny on the beach and gives various opinions as to its causes. Seasoned soldiers will agree that any division that rears men so badly, any regiment that fails to teach men to respect its name and their own personal and individual characters, are the people to be blamed. There are battalions who will look back on Salerno with little satisfaction. But the Commandos shone; there is no reason why the rest of the infantry should not have been as proficient, but one has to agree that where the higher command's plans go awry, the soldier down below cannot produce his best form.

This is a most interesting, swiftly moving story, coloured with men's own recollections, their diaries, both German and British, and studded with episodes from the valiant endeavours of an Italian priest to save the sick in his hospital. There is only one ' bird's eye ' sketch; a few maps are needed.

Anzio. By Wynford Vaughan-Thomas. (Longmans.) 30s.

To some on the southern—the Cassino—front in Italy, it seemed that the Anzio landing of 22nd January, 1943, was either too far away with too few, or too near with too many. Was it intended as a diversion to ease the deadlock on the southern front or was it to be a new main front? The former seems to have been the intention. This record shows the confusion among higher commanders from beginning to end as to the manner of conducting the operation. There were weeks of bitter fighting until the final break-out on 23rd May.

The author, a war correspondent who was there from first to last, has added a great deal to our knowledge and understanding of this mishandled operation and has clearly pinned the blame where he believes it to be at each bungled stage. It comes as a shock to the professional soldier to be told that the lure of having his own men first into a great city was enough to divert an army commander from the utter destruction of a dangerous enemy. He will question the author's acceptance, early on in the book, that a higher commander must ' put himself over ' to his men (and to the public?), as liable to lead to an occasion such as this. We know that all that officers and men ask for from a commander is victory, and victory at as low a cost as possible; it is that which ' puts a commander over to his men,' and to his nation, if he wishes. Whoever first entered Tripoli, Tunis, Rome, they may well not have been of the formation that won the final battle which made entry possible. Sometimes it is well to disobey; perhaps this was an occasion. The staunch Truscott of 6th U.S. Corps would know.

This break-out and the lack of enterprise on first landing will give the student much food for thought. The myths that surrounded the Cassino tragedies will persist until some experienced soldier casts a cold and studious eye over them.

This is a well-told, conscientious account that will be widely read because it is also good reading. The sketches are clear and sufficient.

The Yellow Scarf: An Account of Thuggee and its Suppression. By Lieut.-General Sir Francis Tuker, K.C.I.E., C.B., D.S.O., O.B.E. (J. M. Dent.) 25s.

The Thugs have enabled many writers—including your reviewer—to earn an honest guinea. The two longest and most sensational accounts are the contemporary novel,

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CORUNNA

B·A·T·S·F·O·R·D

The Autobiography of a Thug, by Meadows Taylor, and John Masters's *The Deceivers*. Their story is certainly dramatic in the highest degree. More decisively than any body of men before the Nazis, they said, 'Evil, be thou my good!' A secret society with many thousands of members, they believed that they were carrying out a divine purpose by strangling and robbing travellers. The cunning they used to obtain the confidence of their victims; the duplicity with which they would often travel with them for several days together until all suspicions were lulled and a convenient place found for their murder; their sadistic enjoyment of the irony of the final evening, when songs and laughter were at their height until the fatal signal was given; all this makes exciting reading. On the other side, there are countless stories of courage, of ingenuity, above all of long patient hours of hard work, which enabled the sect to be broken up and destroyed. Behind all this Sleeman was the inspiration and the driving force.

It was really high time he had a biographer, and it was a pleasure to hear that Sir Francis Tuker had undertaken the task. As Sir Francis rightly insists, Sleeman has other claims to fame besides suppressing the Thugs. He would live, for anyone interested in India, by his writings alone and particularly by his *Rambles and Recollections*, the story of his journey across India, told in a plain, vivid style in which he records day by day conversations with simple people about the things which made up their lives. Sir Francis suggests that Sleeman should stand by the side of John Lawrence, Nicholson, and the Punjab group, but I prefer to see him with the earlier and far more attractive generation of Elphinstone and Metcalfe, men who, while they strove to mend the conditions they found about them, combined with a detachment they inherited from the Age of Reason a lively human interest in every aspect of Indian life. The heroes of the Punjab and most of the English in India after the beginning of the evangelical movement display a humourless dogmatic arrogance of which Sleeman was never guilty.

Sleeman's life makes fascinating reading and is to be recommended to any officer who served in the Indian Army. The smells of the village and the freshness of early mornings in camp creep into it again and again. But Sir Francis as a soldier seldom expected to be agreed with, and as a historian, too, he will not be surprised that other people differ from his opinions. I for one do not agree with the implication that it would have been a good thing if Sleeman's advice had been taken and Oudh had not been annexed. I am doubtful whether it can be said that the Mutiny might thus have been avoided (not that Sir Francis does quite say this); the causes of the Mutiny were very complex. I must also lodge a protest against Sir Francis's treatment of *The Competition Wallah*. It is by G. O. Trevelyan, who wrote the biography of Macaulay—perhaps the best biography ever written. He was the son of a civilian and his book seems to me one of the most penetrating and valuable accounts from outside ever written of a civilian's life and of the India of the period.

I am not sure that Sir Francis has been kind enough to those who have no knowledge of India; he speaks, for instance, a good deal about 'Badhak Dacoits,' but never explains what the term means. He might also have told us more about the technique of the Thugs and the technique of defeating them; sometimes his story proceeds rather in the manner of his hero's *Rambles and Recollections* and one finds oneself several years on or back without explanation. But these are slight blemishes. The interest of a life packed with action in a great period of history, the attraction of a man who was brave, amiable, and dedicated to his work, these shine through the whole book.

The Story of the French Foreign Legion. By Edgar O'Ballance. (Faber.) 30s.

Major O'Ballance's new book has been published at a time of heightened interest in the Foreign Legion and the reader opens it with pleasurable anticipation. When he closes it he will feel sadly disappointed. The first four-fifths of the book consists of a rather arid recital of the events that have occurred in the Legion's history since it

Anzio

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was formed in 1831. As the reader proceeds he fights against boredom and wonders where has disappeared or when will be discovered any of the glory or the excitement of which the Legion has certainly had its share. No personalities emerge to draw the interest and few deeds are given more than the emphasis that the most cursory war diary would allot.

The writing is also marred by several irritating and repetitive mannerisms, the recurrence of one of which was so marked as to make this reviewer begin to count. The last one-fifth of the book leaves historical events and recounts facts about the Foreign Legion. Here the author is much happier in his treatment and has provided much of interest and indeed fascination. The merits of this part of the book contrast so much with what went before that the reader is left with the feeling of regret for what might have appeared in the historical part.

The account of the Legion's activities in Algeria since 1954 is short and very much represents the official point of view. It includes some excellent photographs which give a vivid impression of the conditions of fighting against the FLN and the type of man at present in the Foreign Legion. Whether France has made full use of the potential ability and capacity of this almost unique force is left very much in doubt. She seems usually to have been as apprehensive of its powers for misdoing as conscious of its capacity for fighting. Perhaps recent events have justified her doubts.

Major O'Ballance has spent time with the Legion and the impression is strong that he has become, perhaps involuntarily, its apologist. There is little of criticism in the book. As a whole it gives the impression of being very hastily written, with insufficient checking and correcting of style, and is thus an unrewarding event for its readers.

Brassey's Annual: The Armed Forces Year-Book, 1960. Edited by Rear-Admiral H. G. Thursfield. (William Clowes and Sons Ltd.) 63s.

A notice on this important Annual is, we regret, long overdue. A notice it must be, for to review in any detail a volume of some 350 pages containing 32 articles on a wide variety of subjects, together with appendices, would take up many pages of this JOURNAL. But the importance of " Brassey's " cannot easily be exaggerated and this reviewer is always amazed when he finds officers who, even today, have never heard of it.

Brassey's Annual appears on Trafalgar Day and contains always about 30 chapters (articles) on every aspect of defence organization and technique, catering in both facts and ideas—a mine of information and inspiration. This year we have, on a high level, Deterrent, Disengagement, Disarmament, N.A.T.O., and several articles on the forces of foreign Powers. At a more mundane level are articles on military discipline and morale, the recruitment of officers, soldiering with a difference, escort types, and aircraft development. Miscellaneous articles cover the strategic significance of Spain, British shipbuilding, and guided missiles, and there are many more. The Reference Section contains the Defence White Paper and the various Ministers' Statements on their Service Estimates. There are excellent photo-illustrations and a serviceable index.

This great publication, whether used for objective reference or casual reading, is worth all of the three guineas it costs.

NAVAL

Fighting Admiral: The Life and Battles of Admiral of the Fleet Sir James Somerville. By Donald Macintyre. (Evans.) 25s.

Biography is a specialized art, and when its subject is an outstanding naval officer with exceptionally wide contacts and interests, the biographer should be able to cover an equally wide field, applying a shrewd and, if necessary, a critical judgment. Hence the ideal biographer must possess an intimate knowledge not only of the central character, but equally of the persons, circumstances, and events surrounding him. It is in regard to the life, rather than the battles, of his subject that Captain Macintyre sometimes falls short of these admittedly lofty standards. And yet the book is a mine of information, a conscientious if occasionally rather unimaginative portrait of a most colourful personality who was destined to play an important part in the naval operations of the second World War. It should be read by all who at one time or another served (as did your reviewer) with Sir James Somerville; from their own memory such readers will be able to fill in much that has been left unsaid; in some passages they will feel that what has been written could have been differently expressed.

The book should also appeal to those of a later generation who may be looking for something more lively and more human than the rapidly petrifying bones of some recently published naval history. For here is the outline of a man of rare character and wit, a man quick to appreciate the ever-changing pattern of strategy and naval warfare in an era of flux and uncertainty—qualities that are more needed today than ever before.

Sir James Somerville was sure in his reasoning, usually confident in his judgments—both professional and political—modest yet unabashed, courageous, inspiring; in short, a leader of men. He also possessed a quality that was not always conspicuous among his contemporaries in high command, the capacity to grasp the impact of the latest technical development on *every* sphere of naval and inter-Service activity (especially in naval air warfare), to absorb what the experts ' last from school ' had to say, to inspire and encourage them, and, no less important, to discard what seemed irrelevant. Captain Macintyre has somewhat neglected this particular aspect.

The Admiral could look back on an exceptionally varied career, the early part of which was occupied with specialities that were to become paramount in war—communications, radar, and particular fields of intelligence. As Flag Officer commanding the Gibraltar-based Force " H ", it fell to him to protect the Malta-bound convoys against

dangerous Axis depredations, and he played a decisive role in the destruction of the *Bismarck*. Then he assumed command of the Eastern Fleet when our fortunes were lowest, when, to quote Captain Roskill, " we were still trying to fight a five-ocean war with a two-ocean Navy." Here he had to contend with the vexed problem of the chain of command and the area of jurisdiction in a theatre of war containing the newly created post of Supreme Allied Commander. It was not the first time that similar problems had come his way, for they had arisen while he was in command of Force "H". Finally he represented British naval interests in Washington, where he won the regard of the usually unimpressionable Fleet Admiral King. It was not the least of Sir James's assets that he was appreciated as much by foreigners as by his fellow-countrymen.

In his veins ran the blood of famous naval ancestors, and like others before him, he was fated to enjoy all too briefly his own rightful inheritance, the blessings and the fruits of the land that he had valiantly defended in the hour of greatest need.

The British Destroyer. By Captain T. D. Manning. (Putnam.) 42s.

A text book on British destroyers has been a long-felt want, and Captain Manning was the obvious choice as an author to provide it. His great knowledge of ships makes any book such as this an authoritative source of information, with every piece of information pretty well guaranteed for accuracy. Destroyers are covered in this volume from the original *Havock* up to and including the *Darings*, the latest of this breed built in Britain.

First and, for everyone, foremost, the main attraction of Captain Manning's book will be the magnificent series of photographs with which it is illustrated. Many of these must be very rare; all are superbly produced and form one of the great delights of the book. The evolution of the type is most graphically portrayed through this visual presentation, which illustrates clearly the technological advance in destroyer design during the 60 years that the type has existed. The text, though perhaps a little on the sparse side, at least gives the ' vital statistics ' of the various classes as they have evolved into the destroyer as we know her today.

This is a book to be welcomed with enthusiasm. It is not one to read and cast aside, but to keep and treasure because of the great amount of information it records.

Greek Tragedy '41. By Anthony Heckstall-Smith and Vice-Admiral H. T. Baillie-Grohman. (Anthony Blond.) 25s.

This is the story of the evacuation of Greece in 1941 after the short-lived and disastrous campaign against the German invaders. One of the joint authors was the naval officer in command of Operation " Demon," the code name for the evacuation; the other ran one of the small tank landing craft which lifted the soldiers from the beaches.

It is an odd team to write a book of this nature, and to some extent the book they have written reflects the different angles from which each author saw the operation. The mingling of the overall and the local is perhaps less happy than it might be, and there are suspicions that both authors are really too near the trees to appreciate the wood as a whole. There is also a good deal of over-simplification of the political aspects of the decision to go into Greece at that time; a decision which is still, 20 years later, the focus of much argument and criticism.

In spite of these small blemishes, the book shows evidence of considerable research and no little skill in its preparation. It has a breathless tale to tell, the story of disaster tinged with a dogged courage (very occasionally the lack of it) and a genius of local command which can move mountains as though they were molehills. In the words of Admiral Cunningham, it was a " melancholy operation nobly shouldered," and the authors show us in their book how accurate was this description. If it is good sometimes to be reminded of our failures that we may profit from them, as assuredly it is, this is the book to do it for us.

Command the Far Seas. By Keith Middlemas. (Hutchinson.) 25s.

When Tirpitz, at the beginning of the present century, set out to create a modern German battlefleet, he realized that he could not hope to outbuild Britain. So he concentrated Germany's new navy in home waters, secure in the knowledge that, by doing so, he could tie down in the North Sea a very considerable proportion of Britain's naval power. But in the subsequent decade, Germany learned that a score of sloops and gunboats were not enough to support her colonies and other overseas interests in peace; modern cruisers were also needed. What, then, was to be their role in war? The clear answer was the classic *guerre de course;* attacks on British trade, ports, and cable stations for so long as these cruisers could avoid the nemesis which Britain's greater naval strength must ultimately bring them.

The cruisers with which the allied navies had thus to contend on 4th August, 1914, were the *Goeben* and *Breslau*, which were given the special task of reaching Constantinople in order to bring Turkey into the war on Germany's side; von Spee's East Asiatic Squadron which crossed the Pacific to defeat Cradock at Coronel before meeting its own end off the Falklands; the *Dresden*, which joined von Spee, escaped destruction at the Falklands, and was the last to be rounded up in March 1915; the *Karlsrühe* which, after a short career in the North Atlantic, was destroyed by an internal explosion; the *Königsberg* which did little except skulk up the Rufigi river in East Africa; and the *Emden*, under the command of the classic exponent of the skill and audacity of the eighteenth century privateer, von Müller.

The story of all these ships, what they did and how they eluded or were hunted down by the allied navies is a fascinating one, well worth the telling. And Keith Middlemas, in this his first book, deserves our thanks for tackling it with an eye to the intelligent reader rather than to serialization in the popular Press, and for eschewing the prevalent trend of denigrating our first World War leaders. One regrets, therefore, that his work suffers from compression; brevity can be the enemy of accuracy, as with his description of Cradock's encounter with the *Karlsrühe* on 6th/7th August, 1914. And whilst appreciating that the official histories, British and German, were written too soon after the war to be wholly objective, he has too readily accepted such secondary authorities as Lloyd Hirst, Pochammer, and Hoehling, which leads him, for example, to state that Captain Brandt (not Brand, as Mr. Middlemas spells it), who went down in the *Monmouth* at Coronel, was also in command of her when she was in China in 1913.

On the other hand, Mr. Middlemas commits no more serious naval solecism (occasional slips apart, such as once referring to Churchill as First *Sea* Lord) than consistently omitting the definite article before ship's names. And he has unearthed an interesting letter from Cradock to the Governor of the Falklands, possibly the last he penned before Coronel, which has not, I think, been published before. Whilst, therefore, this book can only be recommended to members of this Institution with reservations, one hopes that its author will appreciate the compliment implied by such detailed criticism, and that he will be encouraged to tackle further aspects of our naval history, not least because he already displays a remarkable understanding of the Service. And when he does so, I hope his publishers will be more generous with illustrations and provide a more adequate index.

The Fiercest Battle: ONS 5, 22nd April–7th May, 1943. By Ronald Seth. (Hutchinson.) 21s.

This book alternates between being exasperating and enthralling; exasperating because it takes too long over a lot of unnecessary, and at times inaccurate, recapitulation of German and British submarine personalities and policy, and enthralling when it finally describes the long drawn-out series of actions by our escorts in defence of Convoy ONS 5, against a truly formidable concentration of U-boats.

The author argues, with some conviction, that the defence of this one convoy, which resulted in sinking seven U-boats, won the Battle of the Atlantic and quotes from the memoirs of Admiral Dönitz to support his contention. One likes to think that the escort commanders involved would be extremely hesitant to make a sweeping claim; they know, as well as the rest of us who fought at sea, that the Battle of the Atlantic was not won until VE day, 1945.

Where the book makes a useful contribution to the history of this great battle, is that it pinpoints the moment in time when the escorts finally began to gain an upper hand over the U-boats and, in spite of the largest concentration that Dönitz had yet been able to deploy against a convoy, it was the enemy who suffered unacceptable losses. Most of us are well aware that early 1943 was the turning point in the anti-submarine war, but the escorts—close and support—of Convoy ONS 5 can fairly be claimed to have provided that point.

Of lessons to be learnt and remembered, there are several. The first and most important is that of teamwork in such a deadly game of ' blind-man's-buff ' as anti-submarine action. Few captains can afford to leave the field in the heat of battle, but when they have to for operational reasons, it is vital that there is a fully competent understudy ready to take over. Commander Gretton trained his superbly well-drilled team, but it was the vice-captain, Sherwood, who bore the brunt of the battle.

Another significant fact is that it took three and a half years of war to gain ascendancy over the U-boats, during which time millions of tons of merchant shipping was sent to the bottom. Now, with less shipping available, fewer escorts, and an enemy submarine strength as great as the Germans had at the height of the Battle of the Atlantic, the outset of any future war with the Communist bloc will require every convoy to be fought through as a major fleet action.

ARMY

Charge to Glory. By James Lunt. (Heinemann.) 21s.

" War, which used to be cruel but magnificent," Sir Winston Churchill has written, " has now become cruel and squalid." In many ways this lamentable state of affairs can be attributed to the fact that the martingale has given place to the magneto, the curb-chain to the carburettor, to the disappearance of the horse from the forefront of the fray in favour of the armoured fighting vehicle. We are indeed at long remove from the days when there was a saying in the Prussian Cavalry to the effect that: " First there is the All-Highest; then the Cavalry officer, and then the Cavalry officer's horse. Then there is nothing, and after nothing the Infantry officer ! "

In these drab days it is war but it is not magnificent—to invert Bosquet's famous apophthegm—not in the colourful sense of galloping squadrons in gorgeous uniforms, ' and all the quality, pride, pomp and circumstance of glorious war.' To a generation that has never known the thrill of battle-fighting *à cheval*, as to the dwindling band of those who have experienced it, Colonel Lunt's rousing study of *l'arme blanche* in action should be certain to appeal. For the author's choice of cavalry actions for inclusion in this work ranges from the well-known encounter of Mars-le-Tour to the little-remembered Brandy Station fight of the American Civil War. The admirable account of the dash and gallantry displayed by the British Yeomanry and their Australian comrades in the Beersheba action of October, 1917, is balanced by a vivid word-picture of the magnificent fight put up by the Canadians at Moreuil Wood, which turned the trick against the Germans in March, 1918.

An early chapter is devoted to the last affray, in March, 1942, in which the Cavalry rode at their enemies sword in hand. And if with Fondouk (9th April, 1943) the armoured Cavalry intrude into a chronicle otherwise devoted to the exploits of the *beau sabreur*, their appearance only reflects the change in the means employed, while emphatically confirming the belief that ' the cavalry spirit ' survives in as vigorous and enduring form as ever it knew in the days of yore.

Colonel Lunt has many wise and thoughtful things to say on the transition from the horse to the internal combustion engine. But in a work otherwise singularly free from bias, it is surprising that the author's readiness to accept the traditional unreflective view as to the Duke of York's lack of capacity as a field commander should have persuaded him to overlook His Royal Highness's responsibility for Beaumont (26th April, 1794), which Fortescue has termed " the greatest day in the annals of the British Horse." This criticism apart, the work can unreservedly be commended for the warmth and liveliness of its narrative style and the wide range of military history it takes so easily in its stride.

Weapons of the British Soldier. By Colonel H. C. B. Rogers, O.B.E. (Seeley Service & Co.) 35s.

Until a comparatively short time ago it was impossible to find a book giving a connected account of the personal weapons of the British Army. There are now several works on the subject, and in this, the latest published, Colonel Rogers has written a popular and comprehensive book not only on the arms in general issue to the Regular Army from its inception in 1660 to recent times, but on those used in war from 1066 as well. An exception is the lance carried by Cavalry from 1916, which is not included. The book is extremely well illustrated with line drawings for the earlier period and for the Service issues up to and including the S.M.L.E., with excellent photographs selected with the help of the staff of the Tower Armouries. In the 16 chapters into which he has divided the 250 pages of text, the author has given us a succinct and very readable account, going as fully into detail as the length of the book allows.

He has undoubtedly made good the claim made in the foreword that he has " told the story of the weapons which have been used and of such developments as have influenced their design." He has also told his readers a great deal about the way in which the arms were used and has made it possible not only to recognize Service arms either in museums or private collections, but also to translate, into terms of what the fighting men actually did, such common and rather ambiguous phrases as " deadly volleys of musketry " and " furious charges and counter-charges of Cavalry." Only too often such clichés are all the descriptions given of fighting in many biographies and historical novels. Like so many of us, Colonel Rogers has wanted to know how the soldier fought; and here he has told us.

The first two chapters take the story up to 1660; there are two respectively on gunmakers and gunmaking, two on swords, one on the revolver, the officer's arm of the last hundred years, and throughout the book the balance between the smoothbore arms, which did so much of the work for such a long time, and the technically more interesting rifles has been well kept.

Although there are ample acknowledgments in the introduction and frequent references in the text, it is perhaps to be regretted that there is no bibliography. For those interested in the practical side of soldiering as it used to be up to quite recent days, this is a book to be strongly recommended.

Corunna. By Christopher Hibbert. (Batsford.) 21s.

There are three principal points of interest in the Corunna campaign of 1808–09; the results of the strategy, the character of Sir John Moore, and the performance of our troops. In this new volume of Batsford's *British Battles Series*—in which the former admirable standards of maps, illustrations, and book-production are fully maintained—Mr. Christopher Hibbert has skilfully marshalled into 200 pages an amazing amount of material to give us an incomparable vignette of this memorable enterprise.

As to the strategy, Mr. Hibbert does well to come down on the sober side of some of the more extravagant claims which have been made for the results of the march into Spain. But at the same time he accords to Sir John the full credit that is his due, and which he was not accorded in the dismal days following the return home of his

shattered Army—England's only Army. That the advance from Portugal, and then on from Salamanca, did not save Madrid, is notorious. Indeed, unknown to Moore, the capital had already fallen when the last stage was begun. But southern Spain remained free of the French, and there the foundations were to be laid on which to build that edifice which was finally to be the Emperor's undoing. How clearly did Moore distinguish the ultimate goal from the immediate difficulty. "We have no business here," he wrote from Salamanca, "but being here it would never do to abandon the Spaniards without a struggle." The conflict between that which is militarily desirable and that which is politically necessary was as evident in that Spanish campaign as it was to be 132 years later in the Greek affair.

The author treats Moore with extreme fairness and never descends to idolatry. He shows us his difficulties stemming from his political connections at home, and from his abortive expedition to the Baltic earlier in the same year. He shows us Sir John's realistic grasp of the capabilities of the Spanish Government and armies, in the face of absurdly optimistic estimates engendered by the successes of the previous summer. He shows us, too, what must be admitted to have been Moore's failure to get over to his troops the purpose of the desperate manœuvre they were called upon to carry out, a failure which, by the narrowest of margins, nearly cost him the total destruction of his army. The man is well drawn, and our respect for him, when he finally rallies his men before Corunna, is deep-seated.

But the troops, with their extraordinarily contrasting performance in advance, retreat, and stand, must still remain something of an enigma. What, at bottom, was it that brought them back to their duty after their disgraceful behaviour on the road back from Sahagun? The devotion of their officers? Of their non-commissioned officers? Their loyalty to their Regiments? Their innate sense of comradeship? Or the instinct of self-preservation? And how was it that the performance of the battalions of the 1st Guards, the 43rd, and the 95th was so very much better, as regards discipline, than those of the Line? It would be unfair to Mr. Hibbert to expect him to produce in this volume a definitive answer to these questions, but they certainly need further examination.

It is in this connection only that the reviewer has fault to find. In Appendix I the consolidated figures given for the losses of the individual battalions do not really tell us what we want to know. What would have been better—if indeed they could have been extracted—would have been to have told us how many men began the retreat in each battalion; how many were lost on the roads to Corunna and Vigo; and how many were lost in the battle of the 16th January. This would have given us some evidence on which to base an opinion of the relative performances of the Regiments involved.

The chief beneficiary of Moore's legacy was the Duke. He recognized to the full his debt to that paragon among trainers of troops. Years later he said to his Military Secretary: "You know, Fitzroy, we'd not have won, I think, without him."

Men of Valour : Vol. III of the History of the VIII King's Royal Irish Hussars : 1927-1958. By Olivia Fitzroy. (Published by the Regiment.)

Here is a beautifully produced history of a famous cavalry regiment, which takes the story up to its amalgamation with the 4th Hussars to form the present Queen's Royal Irish Hussars. Plenty of money, it seems, has been available to finance the work, and it appears that every penny has been well spent. Produced *en suite* with the two previous volumes of the Regiment's history, this one contains 20 maps, over 100 photographs and 60 pages of appendices and index, surely enough to satisfy the most demanding critic. (The extracts in Appendix VII from the Officers' Mess Wagers Book are a particularly happy insertion.)

The author, whose maiden name thinly conceals her identity as a Regimental wife, tells a story which takes the Regiment from Wiesbaden between the wars, through the

pangs of mechanization, and into the Western Desert in the early epic days of the Mobile Division. With that Division's successor, the 7th Armoured, and with the 4th Hussars the fate of the 8th was linked up to the end of the Battle of El Alamein. Then as the Armoured Reconnaissance Regiment of the Division the Regiment took part in the North-West Europe campaign. All this might seem to follow a standard pattern, but Miss Fitzroy has made the most of her opportunities, for in her account the splendid spirit of this Regiment comes shining through. One gets the feeling that few can have worried when they found these gay Irishmen of the 8th Hussars posted on their flanks.

To digress a bit, this is just the sort of Regimental history which the new generation of military writers could usefully spare a few hours to browse over. Very soon there are going to be a lot of people writing on military topics who have never been soldiers. However expert their historical technique, they are going to labour under the disadvantage that they will never have experienced the true comradeship of a Regiment, and in a cynical world—and more especially if they earn the major part of their incomes in Fleet Street—there may be much disbelief that this spirit really existed. Those who have served know better, and it is through volumes such as this that the ignorant can be informed and the doubter reassured.

A particularly interesting section of the book is the account of the Regiment's service in Korea. This can safely be said to be essential reading for anyone seeking to study the part played by the Commonwealth troops in that hard-fought affair, in what must have been the most inhospitable country in the world. The reviewer felt a genuine thrill of pride in the performance of our soldiers as he read these fifty pages from end to end without a pause.

The author deserves the gratitude of the Regiment which, through her pages, will cut a fine figure in the annals of the Army.

Proud Heritage : The Story of the Highland Light Infantry—Vol. III—1882-1918. By Lieut.-Colonel L. B. Oatts, D.S.O. (House of Grant, Ltd.) 42s.

The period covered by this book is undoubtedly the most important in the story of the British Army—including as it does the implementation of the Cardwell reforms, the Haldane reforms, several small wars, the South African War, and the first World War. In the years 1914–18 practically all Regiments reached their maximum strength, in the case of the Highland Light Infantry 26 battalions—Regular, Militia, Territorial, and Service. It was also the first time that men from walks of life outside the run of Regular military personnel had joined the Army in large numbers.

Lieut.-Colonel Oatts has produced a very well balanced book. The background is adequate, but no more than is necessary for a proper understanding of Regimental activities. By economy in this direction he has been able to include in some 400 pages an astonishing amount of detail about many units, over a period of 36 very full years. The author also possesses the knack of combining solid facts for the record with frequent anecdotes and incidents in the soldier's life. More than most Regimental histories, this book gives an account of how officers and men lived and the minor incidents of their daily lives. As a junior officer in 1917–18 this reviewer was very closely associated with a battalion of the H.L.I. in a theatre of operations and he can vouch for the accuracy of detail and vivid portrayal of various episodes of which the reviewer was an eye-witness.

The Regiment's prowess at sport has not been neglected and there is a detailed description of the origin—and an explanation—of the famous football slogan " H.L.I.—keep it on the Island."

It is a fair criticism that the book does not mention sufficient names; and it is a fact that the names of many individuals, conspicuous in the story of the Regiment, do not appear in the Index. This is a minor criticism, which is far outweighed by the general excellence of the book. The text is well illustrated and there are adequate maps.

The three volumes of the history of The Highland Light Infantry already published have established Lieut.-Colonel Oatts as a very capable Regimental historian. Those interested in military history—the H.L.I. in particular—will look forward to the fourth, and final, volume of this story of the Regiment.

Distant Drum. By Manohar Mangolkar. (Asia Publishing House.) 18s.

Mr. Mangolkar can not only tell a good story but can depict characters which stay in the mind. His story is of the post-partition Indian Army, written round the attractive figure of a young lieutenant-colonel who finds himself early in command of a battalion and later on the staff at Army Headquarters at New Delhi—of which there is a penetrating description, both in its professional and social aspects. The period is 1949–50, which was not very long after the 'hand-over,' and one wonders indeed if the successors of Colonel Garud have the same attitude to their problems as he had. Have the ideas of Colonel Kamala Kant developed or waned? How much of the 'old boy' atmosphere exists in 1961? All officers of the old Indian Army would be interested in this and your reviewer profoundly hopes that Mr. Mangolkar will give us a sequel to the *Distant Drum* and answer some of the questions he has posed.

AIR

The Forgotten Ones: The Story of the Ground Crews. By Air Chief Marshal Sir Philip Joubert de la Ferté. (Hutchinson.) 25s.

In any Service the fighting arm is naturally accorded the primary honour, and though the supporting services sometimes benefit from reflected glory the author of this book feels that the ground crews, the privates, and the ratings " have had scant notice accorded to them."

It is an understandable omission; ground work in the Air Force is often routine, uncomfortable, and laborious, and as such does not offer much scope for exciting history. The author has tried to overcome the problem by bolstering his story with personal anecdotes, odd tales of ground crews in unlikely situations, and occasionally rather thin devices such as the experiences of aircrew temporarily in a ground role as they walk back from unsuccessful operations. Even the span of the last 40 years, however, has not provided him with much satisfactory material and Sir Philip speaks of " the shortage of stories . . . from which this book has suffered." He has endeavoured to remedy his difficulties by quoting at length from reminiscences supplied by former members of the forces, but this expedient is not entirely successful, for such recollections, although they may have merit as a sketch of what some airmen felt and thought, are often too trivial and naïve to sustain interest and sometimes the experiences recalled are unfortunate and far from typical.

Although the book is a sincere expression of appreciation from a gallant officer and a distinguished author, who has expressed his affection and admiration for the aircraftmen with whom he has served for half a century, the material selected does not measure up to the task and the ground crews deserve more convincing and vigorous treatment than they are given here.

PRINCIPAL ADDITIONS TO THE LIBRARY

BIOGRAPHY AND MEMOIRS

THE HOLLOW CROWN : A LIFE OF RICHARD II. By Harold F. Hutchison. (Eyre and Spottiswoode, 1961.) 30s.

A LIFE OF SHAKESPEARE. By F. E. Halliday. (Duckworth, 1961.) 25s.

ONE LEG : THE LIFE AND LETTERS OF HENRY WILLIAM PAGET : FIRST MARQUESS OF ANGLESEY K.G., 1768–1854. By the Marquess of Anglesey. (Cape, 1961.) 45s.

JOSEPHINE, EMPRESS OF FRANCE. By Barbara Cartland. (Hutchinson, 1961.) 21s.

THE EMPRESS ALEXANDRA, 1872–1918. By E. M. Almedingen. (Hutchinson, 1961.) 25s.

WILLIAM SCAWEN BLUNT : A MEMOIR BY HIS GRANDSON. By the Earl of Lytton. (Macdonald, 1961.) 30s.

THE LIFE AND LETTERS OF ADMIRAL SIR FREDERICK G. D. BEDFORD, G.C.B., G.C.M.G. By F. G. H. Bedford. (Privately printed.) Presented by the author.

BRASSHAT : A BIOGRAPHY OF FIELD-MARSHAL SIR HENRY WILSON. By Basil Collier. (Secker and Warburg, 1961.) 30s. Presented by the publishers.

ASSASSINATION : THE DEATH OF SIR HENRY WILSON AND THE TRAGEDY OF IRELAND. By Rex Taylor. (Hutchinson, 1961.) 25s. Presented by the publishers.

ESSAYS IN BIOGRAPHY. By J. M. Keynes. (Mercury Books, 1961.) 7s. 6d.

THE CAMELS MUST GO : AN AUTOBIOGRAPHY. By Sir Reader Bullard. (Faber, 1961.) 25s.

HEADLINES ALL MY LIFE. By Arthur Christiansen. (Harrimans, 1961.) 25s.

THE EYE OF THE WIND. (Autobiography.) By Peter Scott. (Hodder and Stoughton, 1961.) 42s.

I CAPTAINED THE BIG SHIPS. By Commodore Robert G. Thelwell. (Barker, 1961.) 21s.

WAR AND PEACE

WAR THROUGH THE AGES. (Revised Edition.) By Lynn Montross. (Harper and Bros., N.Y.) 70s.

THE ART OF WAR : FROM THE AGE OF NAPOLEON TO THE PRESENT DAY. By Cyril Falls. (Oxford University Press, 1961.) 8s. 6d. Presented by the publishers. (See review in this JOURNAL.)

STRATEGY AND ARMS CONTROL. By Thos. C. Schelling and Morton A. Halperin. (Twentieth Century Fund, N.Y., 1961.) $2.50. Presented by the publishers. (See review in this JOURNAL.)

ARMS REDUCTION : PROGRAM AND ISSUES. (Edited by David H. Frisch.) (Twentieth Century Fund, N.Y., 1961.) $1.25. Presented by the publishers.

THE CONTROL OF THE ARMS RACE. By Hedley Bull. (Weidenfeld and Nicolson, 1961, for the Institute for Strategic Studies.) 21s. Presented by the publishers. (See review in this JOURNAL.)

MEN IN UNIFORM : MILITARY MANPOWER IN MODERN INDUSTRIAL SOCIETIES. By M. R. D. Foot. (Weidenfeld and Nicolson, 1961, for the Institute for Strategic Studies.) 21s. Presented by the publishers.

THE UNITED NATIONS AND THE USE OF FORCE. By Inis L. Claude Jr. (Carnegie Endowment for International Peace, 1961.) Presented by the publishers.

CHRISTIANS AND POWER POLITICS. By Alan Booth. (S. C. M. Press, 1961.) 6s. Presented by the publishers.

SCIENCE

LONG RANGE BALLISTIC MISSILES. By Eric Burgess. (Chapman and Hall, 1961.) 35s.

FIRST WORLD WAR

COMMAND THE FAR SEAS. By Keith Middlemas. (Hutchinson, 1961.) 25s. Presented by the publishers. (See review in this JOURNAL.)

THE BIG PUSH. By Brian Gardner. (Cassell, 1961.) 21s.

THE DONKEYS. By Alan Clark. (Hutchinson, 1961.) 25s. Presented by the publishers.

SECOND WORLD WAR

SANDS OF DUNKIRK. By Richard Collier. (Collins, 1961.) 21s.

THE FIERCEST BATTLE : ONS 5, 22nd April–7th May, 1943. (Hutchinson, 1961.) 21s. (See review in this JOURNAL.)

SALERNO. By Hugh Pond. (Kimber, 1961.) 30s. Presented by the publishers. (See review in this JOURNAL.)

ANZIO. By Wynford Vaughan Thomas. (Longmans, 1961.) 30s. Presented by the publishers. (See review in this JOURNAL.)

THE MEANING OF YALTA. Edited by John Snell. (Louisiana State University Press, 1958.) Presented by Dr. Forrest Pogue.

WHO LIVED TO SEE THE DAY : FRANCE IN ARMS, 1940–45. By Philippe de Vomécourt. (Hutchinson, 1961.) 25s. Presented by the publishers. (See review in this JOURNAL.)

NAVAL

THE TRUE STORY OF THE GROSVENOR. By Percival Kirby. (Oxford University Press, 1960.) 30s.

THE BRITISH DESTROYER. By Captain T. D. Manning, C.B.E., V.R.D., R.N.V.R. (Putnam, 1961.) 42s. Presented by the publishers. (See review in this JOURNAL.)

INSHORE HEROES : THE STORY OF H.M. MOTOR LAUNCHES IN TWO WORLD WARS. By Wilfrid Granville and Robin A. Kelly (W. H. Allen, 1961.) 25s. Presented by the publishers.

THE MARY : THE INEVITABLE SHIP. By Neil Potter and Jack Frost. (Harrap, 1961.) 25s.

SPY RING : A FULL STORY OF THE NAVAL SECRETS CASE. By John Bullock and Henry Miller. (Secker and Warburg, 1961.) 15s.

ARMY

CHARGE TO GLORY : A GARLAND OF CAVALRY EXPLOITS. By James Lunt. (Heinemann, 1961.) 21s. Presented by the publishers. (See review in this JOURNAL.)

WEAPONS OF THE BRITISH SOLDIER. By Colonel H. C. B. Rogers, O.B.E. (Seeley Service and Co., 1961.) 35s. Presented by the publishers. (See review in this JOURNAL.)

HISTORY OF THE SOMERSET LIGHT INFANTRY (PRINCE ALBERT'S), 1946–1960. By Kenneth Whitehead. (Privately published, 1961.) Presented by the publishers.

PROUD HERITAGE : THE STORY OF THE H.L.I. VOL. III. 1882–1918. By Lieut.-Colonel L. B. Oatts, D.S.O. (The House of Grant Ltd., 1961.) 42s. Presented by the publishers. (See review in this JOURNAL.)

AIR

THE FORGOTTEN ONES : THE STORY OF THE GROUND CREWS. By Air Chief Marshal Sir Philip Joubert de la Ferté, K.C.B., C.M.G., D.S.O. (Hutchinson, 1961.) 25s. Presented by the publishers. (See review in this JOURNAL.)

GREAT BRITAIN

CHANNEL UNDERGROUND : A NEW SURVEY OF THE CHANNEL TUNNEL QUESTION. By Deryck Abel. (Pall Mall Press, 1961.) 17s. 6d.

THE RAILWAY POLICEMAN. By J. R. Whitbread. (Harrap, 1961.) 18s.

FRANCE

THE TRIUMPH OF INTEGRITY : A PORTRAIT OF CHARLES DE GAULLE. By Duncan Grinnell-Milne. (The Bodley Head, 1961.) 30s.

THE STORY OF THE FRENCH FOREIGN LEGION. By Edgar O'Ballance. (Faber, 1961.) 30s. Presented by the publishers. (See review in this JOURNAL.)

TRAGEDY IN ALGERIA. By Gerard Mansell. (Oxford University Press for Institute of Race Relations, 1961.) 6s. Presented by the publishers.

UNITED STATES

EDISON : A BIOGRAPHY. By Matthew Josephson. (Eyre and Spottiswoode, 1961.) 42s.

THE NECESSITY FOR CHOICE : PROSPECTS OF AMERICAN FOREIGN POLICY. By Henry A. Kissinger. (Chatto and Windus, 1960.) 30s.

THE POLITICS OF UPHEAVAL : THE AGE OF ROOSEVELT. VOL. III. By Arthur Schlesinger Jr. (Heinemann, 1961.) 63s.

U.S.S.R.

UNDER SOVIET SKINS. By Ronald Hingley. (Hamish Hamilton, 1961.) 21s.

POWER AND POLICY IN THE U.S.S.R. : A STUDY OF SOVIET DYNASTICS. By Robert Conquest. (Macmillan, 1961.) 35s.

MIDDLE EAST

THE EMERGENCE OF MODERN TURKEY. By Bernard Lewis. (Oxford University Press for the Royal Institute of International Affairs, 1961.) 48s.

MEMED MY HAWK. By Yasha Kemal. (Collins and Harvill Press, 1961.) 18s.

FOOTSTEPS IN THE SAND. By David Harrison. (Benn, 1961.) 25s.

SOUTH ASIA

CHANGING PATTERNS IN SOUTH ASIA. By Ian Thomson. (Barrie and Rockliff, 1961.) 18s.

SIKANDER SAHIB : THE LIFE OF COLONEL JAMES SKINNER, 1778–1841. By Dennis Holman. (Heinemann, 1961.) 25s.

THE YELLOW SCARF : AN ACCOUNT OF THUGGEE AND ITS SUPPRESSION. By Lieut.-General Sir Francis Tuker. (Dent, 1961.) 30s. Presented by the publishers. (See review in this JOURNAL.)

A TASTE OF THE HILLS. By Miles Smeeton. (Hart-Davis, 1961.) 25s.

AFRICA

THE FALL OF KRUGER'S REPUBLIC. By J. S. Marais. (Oxford University Press, 1961.) 35s.

THE SLAVES OF TIMBUKTU. By Robin Maugham. (Longmans, 1961.) 25s.

HISTORICAL

EGYPT OF THE PHARAOHS : AN INTRODUCTION. By Sir Alan Gardiner. (Oxford University Press, 1961.) 35s.

NEHRU ON WORLD HISTORY. Edited by S. K. Padover. (The Bodley Head, 1961.) 21s.

LETTERS AND DOCUMENTS OF NAPOLEON. VOL. I : THE RISE TO POWER. Selected and edited by John Eldred Howard. (Cresset Press, 1961.) 55s. Presented by the publishers.

INTERNAL WAR AND PACIFICATION : THE VENDÉE. 1789–1796. By Peter Paret. (Princeton University Press, 1961.) $1. Presented by the author.

CORUNNA. By Christopher Hibbert. (Batsford, 1961.) 21s. Presented by the publishers. (See review in this JOURNAL.)

THE DILESSI MURDERS. By Romilly Jenkins. (Longmans, 1961.) 21s.

A HISTORY OF IRELAND. By Edmund Curtis. (Methuen University Paperbacks, 1961.) 12s. 6d.

THE PATTERN OF COMMUNIST REVOLUTION : A HISTORY OF WORLD COMMUNISM. (Revised and enlarged edition.) By Hugh Seton-Watson. (Methuen, 1960.) 30s.

OUR TIMES, 1900–1960. By Stephen King-Hall. (Faber, 1961.) 28s. Presented by the publishers.

LAW

THE FACES OF JUSTICE. By Sybille Bedford. (Collins, 1961.) 21s.

THE JUDGES AND THE JUDGED. By Edgar Lustgarten. (Odhams, 1961.) 21s.

GUILTY BUT INSANE. By G. W. Keeton. (Macdonald, 1961.) 21s.

THE SERVICES OF A SOLICITOR. By H. J. B. Cockshutt. (Hodder and Stoughton.) 2s. 6d.

MISCELLANEOUS

THE WEST INDIES AND THEIR FUTURE. By Daniel Guérin. (Dennis Dobson, 1961.) 18s.

THE NATURE OF ARMS. (Heraldry.) By R. Gayre. (Oliver and Boyd, 1961.) 35s.

NO LATITUDE FOR ERROR. By Sir Edmund Hillary. (Hodder and Stoughton, 1961.) 21s.

THOUGHT REFORM AND THE PSYCHOLOGY OF TOTALISM. By Robert J. Lifton. (Gollancz, 1961.) 30s.

QUICKER READING. By Harry Bayley, B.A. (Pitman, 1959.) 21s.

A BOOK OF ANECDOTES. By Daniel George. (Hulton, 1958.) 21s.

A BOOK OF CHARACTERS. By Daniel George. (Hulton, 1959.) 21s.

COLLECTED ESSAYS. By George Orwell. (Secker and Warburg, 1961.) 30s.

RETIRE INTO THE SUN. By Cecil Chisholm. (Phoenix House, 1961.) 18s.

RECOMMENDED ARTICLES

War and the Services

Conventional Artillery and Nuclear Missiles	*Military Review*, March, 1961.
Conventional *vs.* Nuclear Firepower	*Military Review*, May, 1961.
The Planop Staff	*Military Review*, March, 1961.
The Soviet Naval Goal: Satellite Seas ...	*U.S. Naval Institute Proceedings*, April, 1961.
The Role of N.A.T.O. Navies in War	*U.S. Naval Institute Proceedings*, April, 1961.
The Growing Demand for Airborne Forces...	*Military Review*, April, 1961.
Military Use of Television in the Soviet Bloc	*Armor*, May–June, 1961.
What of Manned Aircraft?	*Ordnance*, May–June, 1961.
The Attack Carrier—Mobile Might	*U.S. Naval Institute Proceedings*, May, 1961.
The Military Thinking of President Kennedy	*General Military Review*, May, 1961.
Obsolescence	*Military Review*, June, 1961.

Current Affairs

Albania: A Chinese Satellite in the Making	*World Today*, May, 1961.
Can We Stop Losing the Propaganda War? ...	15 *Nations*, No. 19.
Are We Losing the War of Words?	*The Times*, 24th April, 1961.
Australia's Defence Enigma	*Military Review*, April, 1961.
Australia's Three Defence Pillars	*The Economist*, 20th May, 1961.
Fear and Failure in the Congo	*Encounter*, June, 1961.
Background to the Angola Crisis	*World Today*, July, 1961.
South African Prospect	*Foreign Affairs*, July, 1961.
Britain and the Common Market: The State of the Debate	*World Today*, June, 1961.
Britain Into Europe (Five Aspects)	*The Economist*, 3rd June, 1961.
Soviet Psychological Strategy	*U.S. Naval Institute Proceedings*, June, 1961.
The Communist Psychological Offensive ...	*General Military Review*, June, 1961.
Russia and the Arab World	*World Today*, July, 1961.
East Germany—Profile of a Reluctant Satellite	*U.S. Naval Institute Proceedings*, June, 1961.

ALL THE ABOVE ARTICLES MAY BE SEEN IN THE LIBRARY

ONE HUNDRED AND THIRTIETH ANNUAL GENERAL MEETING

Tuesday, 2nd May, 1961

The 130th Annual General Meeting of the Royal United Service Institution was held at the Institution, Whitehall, London, S.W.1, on Tuesday, 2nd May, 1961, at 3 p.m.

AIR CHIEF MARSHAL SIR LESLIE HOLLINGHURST, G.B.E., K.C.B., D.F.C., was in the Chair.

THE CHAIRMAN: I will ask the Secretary to read the Notice convening the meeting.

THE SECRETARY (Commander P. R. Read, R.N.) read the Notice, which appeared in *The Times* of 18th April, 1961.

ANNUAL REPORT FOR 1960

The Council have the honour to present their Annual Report for the year 1960.

COUNCIL

VICE-PRESIDENTS

Field-Marshal The Lord Wilson of Libya, G.C.B., G.B.E., D.S.O., and General The Lord Ismay, K.G., P.C., G.C.B., C.H., D.S.O., D.L., were re-elected Vice-Presidents.

ELECTED MEMBERS

The following Members were re-elected at the Annual General Meeting held on 3rd May, 1960:—

Admiral Sir Geoffrey Oliver, G.B.E., K.C.B., D.S.O.
General Sir Hugh C. Stockwell, G.C.B., K.B.E., D.S.O., A.D.C.
Air Chief Marshal Sir Leslie Hollinghurst, G.B.E., K.C.B., D.F.C.
Brigadier H. P. Crosland, C.B., C.B.E., M.C., T.D., D.L.
Group Captain Sir Archibald Hope, Bart., O.B.E., D.F.C.

Rear-Admiral P. W. Gretton, C.B., D.S.O., O.B.E., D.S.C., was elected a Member at the same Meeting.

During the year, Lieut.-General Sir Ian M. Riches, K.C.B., D.S.O., and Rear-Admiral M. J. Ross, D.S.C., were elected to membership.

REPRESENTATIVE MEMBER

Air Vice-Marshal P. D. Holder, D.S.O., D.F.C., accepted the invitation of the Council to serve as Air Ministry Representative.

EX OFFICIO MEMBERS

The following accepted the invitation of the Council to serve as an ex officio Member of the Council on taking up the appointment shown:—

Admiral Sir Caspar John, G.C.B., First Sea Lord.

Sir Robert H. Scott, G.C.M.G., G.B.E., Commandant of the Imperial Defence College.

Major-General C. M. F. Deakin, C.B., C.B.E., Director, Territorial Army and Cadets.

Rear-Admiral J. P. Scatchard, D.S.C., Commandant, Joint Services Staff College.

MEMBERSHIP

The total number of members on the roll at the end of 1960 was 5,232 compared with 5,609 in 1959. During the year 176 members joined the Institution compared with 207 in 1959. The following shows the figures for the past seven years.

	Joined			*Re-*	*Deceased*		*Struck*	
Year	*Annual*	*Life*	*Total*	*signed*	*Annual*	*Life*	*off*	*Total*
1960	167	9	176	295	29	22	207	553
1959	173	34	207	706	38	25	29	798
1958	204	60	264	177	47	39	31	294
1957	167	43	210	138	51	30	30	249
1956	222	64	286	120	43	25	20	208
1955	239	48	287	142	56	35	22	255
1954	199	43	242	192	48	29	34	303

The details of members joining during the year are as follows:—

Regular Army	112
Royal Air Force	24
Royal Navy	21
Royal Marines	4
Canadian Forces	4
Royal Naval Reserve	3
Indian Forces	3
Civilian	2
Territorial Army	1
Rhodesia & Nyasaland Forces	1
Malayan Forces	1
	176

FINANCE

The excess of expenditure over income is £1,420 4s. 8d. compared with a similar excess in 1959 of £25 2s. 6d. but, for reasons given in the following paragraph, the actual excess in 1959 was £2,122 19s. 0d.

Refund of Tax: As stated last year in the Finance Section of the Annual Report for 1959, the sum of £2,097 16s. 6d. received during that year referred to refunds for previous years. The net sum accruing in respect of 1959 was £1,814 11s. 4d. and it is against this that the 1960 amount must be compared. The year 1960 thereby shows an excess of £472 12s. 9d. over 1959 in tax recovered through covenanted subscriptions.

Life Subscription Fund: To offset the Bank overdraft brought forward on 1st January, 1960, and to meet current running costs, investments were sold to realise £3,030 18s. 2d. cash. These stocks were held in the Life Subscription Fund and represented part of the interest from investments which had accumulated in the Fund. The proceeds were credited to the General Fund, as that Fund bears, and has always borne, the cost of services to those life members who no longer hold any credit in the Life Subscription Fund.

RECEIPTS

	1960			1959		
	£	s.	d.	£	s.	d.
Annual Subscriptions	6,656	4	1	5,594	3	6
Life Subscriptions (amount brought to credit) ...	1,994	10	0	2,244	0	0
Income Tax recoverable (*see above*)						
Museum	3,736	19	0	3,870	0	0

Annual subscriptions: The two factors affecting the rise are:—

(*a*) increased subscriptions from those members who continued their membership and,

(*b*) resignations following the increase in subscriptions.

Life subscriptions: Life subscriptions brought to credit represent £1 10s. from each life member who joined prior to 1st January, 1960, and whose capital payment has not yet been so expended, and £2 10s. from each life member who joined during the year 1960. The drop in income from this source is due to the number of individual accounts that were exhausted by the final transfer in 1959.

Museum: The decrease in takings of £133 is due to the very bad weather during 1960.

EXPENDITURE

	1960			1959		
	£	s.	d.	£	s.	d.
Salaries, wages, etc.	12,567	19	9	12,194	19	7
Journal Printing	4,557	11	1	4,409	14	7
Lighting	491	17	6	717	6	1
General Repairs and Maintenance...	1,023	13	8	814	9	1

Salaries, wages, etc.: The rise of £373 is due to service increments.

Journal Printing: The Trade Costing Committee ascertained that the increased costs arising from the 1959 dispute in the printing trade amounted to 12½ per cent., but the Institution's Printers limited the surcharge to the Institution to 7½ per cent.

Lighting: After discussions with the London Electricity Board the Institution and Banqueting House were regraded 'Cl Installed Load Rate', which resulted in the saving shown.

General Repairs and Maintenance: During the year the Reading and Writing Room, Editor's Office, Inner and Outer Halls, ground-floor Office, Toilet and Attendants' rooms, and the landings on the Main Staircase were redecorated in addition to minor repairs throughout the building. It is the policy of the Committee to place importance on maintenance as an economy in the long term.

JOURNAL

The JOURNAL continues to maintain its popularity, and the high standard of its lectures and articles has been the subject of many commendations. Many more of them than in the past have been reprinted in other journals, both at home and abroad, and several have been used as study subjects in universities and staff colleges. More articles from foreign sources have been printed, and the policy of widening the scope of the JOURNAL continues.

Considerable and willing assistance has once again been given by the Service Departments, Commandants of Staff Colleges, and the Admiralty, War Office, and Air Ministry representatives on the Council in preparing the lecture programme, in gaining approval of articles written by serving officers, and in general and helpful advice to the Editor on many matters.

LIBRARY

Interest in the library continues to increase, the number of books borrowed being again up by over 600. More members are booking volumes in advance of publication and more books are being sent out by post. The postal service is still not well enough known, even old members expressing surprise when told that books can be sent to them in any part of the world.

The reading room now attracts many and there is no doubt that the indexing of articles and the newspaper cutting service have proved of real value to the discerning. It is a pity that more serving officers do not make use of these resources; those who do are enthusiastic.

Members will much regret to hear of the sad death, early this year, of the library head clerk, Mr. H. E. Davies. He will be greatly missed.

MUSEUM

During 1960 there were 43,040 paid admissions to the Museum, comprising 28,523 adults and 14,517 children. Free entry was given to 1,210 members of the Services and to 336 cadets, scouts and school parties, as well as a number of members' guests passing through the private entrance from the Museum. The total recorded number of visitors was 44,586, which is a small reduction on the previous year and is undoubtedly attributable to bad weather during the normal peak periods.

From the point of view of publicity the year was a good one. Both the British Broadcasting Corporation and Independent Television made use of the Museum and its exhibits, especially those from Waterloo and the Boer War, and due recognition was given in the programmes. On January 4th, a programme dealing entirely with the Museum by Miss Audrey Russell of the B.B.C. and the Secretary, assisted by Attendants Hook, Coulson and Ledger, was broadcast on sound. It resulted in a 60 per cent. increase in admissions on the following day but this was naturally not sustained. Publicity over the air was first started in 1952 and since then one full and two short television presentations with seven programmes on sound, including recordings for the Canadian and Australian Broadcasting Corporations, have been broadcast. In the last two the Secretary covered the activities and aims of the Institution as well as the Museum; extracts from lectures at the Institution have also found their place in the B.B.C. Overseas programme. This opportunity is taken to record our appreciation of the help and co-operation given by the broadcasting authorities, especially by Miss Audrey Russell and Mr. Richard Dimbleby, C.B.E., of the B.B.C.

The National Army Museum, which had received over one hundred exhibits as a gift from the Institution, was further assisted by the short-term loan of some special pieces for the opening of the Museum by Her Majesty The Queen in July. Among others to receive major practical assistance were the Imperial War Museum, Army Medal Office, Green Howards, Middlesex Regiment and R.A.F. Museum at Cranwell.

Among the many visitors were Lord John Hope, the Minister of Works, who is the Government authority for the Banqueting House, and the Royal Tournament contingents of the Gurkha and the Queen's Own Nigeria Regiments.

The deaths of Attendant H. Russell (late Royal Marines) and Cleaner J. Devery (late R.A.P.C.) during the year are recorded with regret.

As this brief report will be the last by the present Curator, he would like to express his appreciation of the loyal service and willing co-operation of all members of the Museum Staff. He and the Deputy Curator wish specially to mention Attendant A. Freeman for giving his expert craftsmanship to work outside his normal duties.

ROYAL UNITED SERVICE INSTITUTION

1959 £		£	s.	d.	£	s.	d.
	ACCUMULATED FUND—						
	Excess of Assets over Liabilities at 31st December, 1959	41,165	13	4			
	Add : Appreciation of Investments since 31st December, 1959	297	4	0			
	Transfer from Life Subscription Fund (see Annual Report—Finance Section)	3,030	18	2			
		44,493	15	6			
	Less : Revenue Account— Deficit per annexed Account	1,420	4	8			
41,166					43,073	10	10
871	MUSEUM EXHIBITS PURCHASE FUND				901	12	4
5,318	LEASEHOLD REDEMPTION FUND				5,383	18	3
17,549	LIFE SUBSCRIPTION FUND				12,784	9	9
1,802	DISCRETIONARY FUND				1,763	13	8
843	SUBSCRIPTIONS PAID IN ADVANCE				823	2	6
3,147	CREDITORS				2,780	11	8
3,255	BANK OVERDRAFT...				1,498	12	9
£73,951					£69,009	11	9

JOHN A. LONGMORE, Brigadier, *Chairman, Finance Committee.*

P. R. READ, Commander R.N., *Secretary.*

TO THE MEMBERS OF THE

We have audited the above Balance Sheet dated 31st December, 1960, and have obtained all the information and explanations we have required. In our opinion such Balance Sheet is properly drawn up so as to exhibit

ALDERMAN'S HOUSE,
BISHOPSGATE, LONDON, E.C.2.
21st February, 1961.

BALANCE SHEET, 31st DECEMBER, 1960

1959 £		£ s. d.	£ s. d.
23,102	LEASEHOLD BUILDING, Whitehall, S.W.1		23,101 16 8
7,744	FURNITURE, FIXTURES, FITTINGS (as valued for Insurance at 4th July, 1945, with subsequent additions at cost)		7,770 0 3
	LEASEHOLD REDEMPTION FUND—		
	Premiums paid to 31st December, 1959, on Insurance Policies for £23,100 expiring October, 1972 ...	5,317 14 8	
	Add : Premium paid during the year	66 3 7	
5,318			5,383 18 3
	LIFE SUBSCRIPTION FUND—		
	Investments at Market Prices, 31st December, 1960—		
	£3,000 3% British Transport Guaranteed Stock, 1978–88	1,785 3 8	
	260 General Electric Co., Ltd., £1 Ordinary Shares	386 15 0	
	1,965 International Investment Trust, Ltd., 5/– Ordinary Shares	2,358 0 0	
	750 Northern Securities Trust, Ltd., 10/– Ordinary Stock Units	975 0 0	
	£2,500 3% Savings Bonds, 1960–70...	1,962 10 0	
	£6,558 3% Savings Bonds, 1965–75...	4,688 13 9	
	Balance at Bankers	628 7 4	
17,549			12,784 9 9
	DISCRETIONARY FUND—		
	Investment at Market Price, 31st December, 1960—		
	£1,787 3% Savings Bonds, 1965–75...	1,277 10 0	
	Balance at Bankers	486 3 8	
1,802			1,763 13 8
	INVESTMENTS—		
	AT MARKET PRICES 31st December, 1960—		
	£900 Barclays Bank Ltd., Ordinary Stock	3,060 0 0	
	£563 The Bowater Paper Corporation, Ltd., Ordinary Stock	1,506 0 6	
	320 British-American Tobacco Co., Ltd., 10/– Ordinary Stock Units	980 0 0	
	425 Glaxo Laboratories Ltd., 10/– Ordinary Stock Units	1,357 6 10	
	£720 Imperial Chemical Industries Ltd., Ordinary Stock	2,304 0 0	
	275 Marks & Spencer, Ltd., 5/– 'A' Ordinary Shares	1,299 3 6	
	297 Metal Box Co., Ltd., £1 Ordinary Stock Units	1,039 10 0	
	125 Prudential Assurance Co., Ltd., 4/– 'A' Shares	2,187 10 0	
	£113 Shell Transport & Trading Co., Ltd., Ordinary Stock	738 0 8	
	£250 Unilever Ltd., Ordinary Stock	1,812 10 0	
15,783			16,284 1 6
2,626	DEBTORS, STOCK OF PAMPHLETS AND AMOUNTS PAID IN ADVANCE		1,873 2 1
27	CASH IN HAND		48 9 7
£73,951			£69,009 11 9

ROYAL UNITED SERVICE INSTITUTION

a true and correct view of the Institution's affairs according to the best of our information and the explanations given to us and as shown by the books of the Institution.

BARTON, MAYHEW & CO.,
Chartered Accountants,
Auditors.

REVENUE ACCOUNT FOR THE YEAR

1959 £		£ s. d.	£ s. d.
	Salaries, Allowances, Wages and National		
12,195	Insurance		12,567 19 9
—	Attendants' Clothing		36 13 8
8	Museum Repairs and Sundries		- - -
4,410	Journal Printing	4,557 11 1	
721	Journal Postages	630 4 2	
396	Literary Services	434 11 0	
59	Shorthand Notes	86 11 8	
			5,708 17 11
720	Library Purchases	784 13 7	
81	Periodicals and Newspapers	97 1 0	
			881 14 7
10	Lecture Expenses		2 15 6
580	Ground Rent	580 0 0	
119	Water Rate	119 3 0	
185	Insurance...	190 12 6	
			889 15 6
444	Fuel and Heating	433 5 2	
717	Lighting	491 17 6	
814	General Repairs and Maintenance	1,023 13 8	
			1,948 16 4
306	House Expenses and Sundries	283 12 6	
315	Audit and Accountancy Charges	245 0 0	
35	Legal Expenses	- - -	
31	Architects' Expenses	15 15 0	
310	Postages, Telegrams, etc.	215 3 11	
517	Printing, Stationery and Binding of Books ...	540 8 10	
151	Telephone	140 19 3	
			1,440 19 6
50	Contributions to Staff Pension Scheme		50 6 10
66	Leasehold Redemption Fund		66 3 7
23	R.U.S.I. Gold Medal Essay Prize		- - -
£23,263			£23,594 3 2

ENDED 31st DECEMBER, 1960

1959						
£		£	s.	d.	£	s. d.
5,594	Members' Annual Subscriptions Received ...	6,656	4	1		
	Life Subscriptions					
2,244	Amount brought to Credit	1,994	10	0		
	Voluntary Subscriptions					
67	from long-term life members	84	18	5		
					8,735	12 6
	Income Tax Recoverable on Subscriptions under Deed of Covenant					
2,650	Annual Members	1,881	10	5		
1,262	Life Members	405	13	8		
					2,287	4 1
11,817						
					11,022	16 7
3,870	Admissions to Museum...	3,736	19	0		
42	Sales of Catalogues and Pamphlets	59	0	1		
					3,795	19 1
2,766	Sales of Journal	2,711	0	4		
1,017	Advertisements in Journal	1,011	11	1		
					3,722	11 5
175	Miscellaneous Receipts				195	2 8
551	Dividends and Interest Received (Gross) ...				437	8 9
3,000	Government Grants				3,000	0 0
	Balance, being Deficit for the Year,					
25	carried to Accumulated Fund				1,420	4 8
£23,263					£23,594	3 2

CHAIRMAN'S ADDRESS

THE CHAIRMAN: We have received copies of the Report and Accounts for 1960, but before asking you to approve them, I ask your indulgence while I make a few remarks.

I will shortly submit for your approval various amendments to our Bye-laws. The text of those Resolutions has been displayed on the Notice Board in the Institution for some weeks and I am sure that you are all familiar with them. In short, the object of the amendments is to provide a more workmanlike organization to ensure that a higher proportion of younger serving officers than formerly take their part in the government of our Institution, and I commend them to you for your approval.

I must also make a few remarks about our membership. As you can see from the annual incomes from subscriptions in 1959 and 1960, the financial effect of the increase in subscriptions has been disappointing. The effect of my appeal to members in the circular letter of November, 1960, has also been disappointing. Although our membership is greater now than it was at this time last year, we have in no way made up the leeway caused by resignations resulting from the increase in subscriptions. But an increased membership, which is the main source of our income, is vitally necessary if we are to survive—and I use that word advisedly.

The percentage of serving officers of all three Services who are members is deplorably low—understandably, perhaps, because many of the very senior members of the Services are not themselves members and it is possibly to them that the young officer looks for his example. If they fail us, how are we to blame the more junior officers?

I think that the time is ripe for those on the Council to consider whether we should not open our doors a little wider and encourage gentlemen who have not had the privilege of serving in the armed forces to join the Institution. Interest in "The promotion and advancement of the science and literature of the Services"—to quote our Charter—is not now (if it ever was) the prerogative of the soldier, sailor, or airman. There are, I think, many, particularly those in the age groups who missed active participation in the two wars, who are sufficiently interested to join and who would make worthy members of your Institution. That is for the Council.

At the moment I ask you again to do all you can to encourage membership. I repeat that if the majority of our members would encourage one or two others to join, we should soon be in a very satisfactory position.

I must also make some reference to our Museum. You will be aware from reading the Press and *Hansard* and so on that there is an increasing body of opinion which wishes to see the Banqueting House opened as a show place. We have had discussions with the Ministry of Works, and the Minister suggested that I might make this statement this afternoon:

> "The Government is anxious to regain possession of the Banqueting House to open it to the public as a show place on its own merits, and has made certain proposals for a possible move. The Council and the Ministry of Works are now discussing the financial and other implications of such a move, but it is not yet desirable to make any public announcement."

I do not think that I can add to that and the object of my original reference was to reassure members of the Institution, particularly those who are not here today

but who will read the report of the meeting in the JOURNAL, that the Council have your interests very much in mind. I am sure that whatever arrangements are reached will be reasonably equitable and I would like to express my thanks to the Vice-Chairman, Admiral Sir Henry Moore, who has borne the brunt of the discussions with the Ministry of Works. With him leading for us, I have not the slightest doubt of the outcome.

I must also refer to the retirement of our Secretary, Lieutenant-Colonel Wilkinson. He has served us wonderfully for many years and his departure is a great loss. I am sure that you will all wish him health and happiness in his retirement. (*Applause.*)

His retirement provided an opportunity for reshaping the Secretariat, and your Council selected Brigadier John Stephenson to be the first Director of the Institution. He is so well known to you and to the thousands who use the Library that I need not say any more than that we sincerely welcome him, and Commander Read who has replaced Colonel Wilkinson as Secretary.

It is appropriate to record our thanks to the members of the permanent staff who, as usual, serve us so loyally and so well.

The JOURNAL continues to be a valuable source of information to our members and on your behalf I would like to thank the many eminent people who give up time to come and talk to us, and whose lectures are reported in the JOURNAL as a permanent record.

I shall not make any remarks about the accounts, but I will ask the Chairman of the Finance Committee, Brigadier Longmore, if he would like to comment.

BRIGADIER J. A. LONGMORE: The only thing I would like to say about the accounts is that last year we lost £1,420 and that we must face the doubling of that loss over the next year. Inflation still goes on and we have to contend with that, plus the fact that we have reorganization which is being undertaken to modernize the Institution.

May I second the proposition that the report and accounts be approved?

The Resolution was carried unanimously.

THE CHAIRMAN: I call on Commodore Harrison to move the second resolution.

COMMODORE R. HARRISON: I have much pleasure in proposing

"That Messrs. Barton, Mayhew & Company be re-elected Auditors for the ensuing year."

BRIGADIER LONGMORE: I have much pleasure in seconding that resolution.

The Resolution was carried unanimously.

THE CHAIRMAN: The third resolution, proposed by the Council, is, "That amendments to Bye-laws, Chapters III and IV as circulated be adopted." I will not read out all the changes. This is a voluminous document, but the changes have the intention of making the Institution more workmanlike and viable.

The Resolution was carried unanimously.

The amendments are as follows:—

Paragraph 1—*delete* and *substitute:*—

"The Council is to consist of a President, and Vice-Presidents, who are *ex officio* Members, 15 elected Members, three representative Members nominated by the Admiralty, War Office, and Air Ministry respectively, and certain other *ex officio* Members."

Paragraph 2(*a*)—*delete* and *substitute:*—

" The Council shall be a representative one and the elected Members shall be as follows: Naval Members five, to include three representatives of the Royal Navy of which at least two should be serving officers, and one each of the Royal Marines and Royal Naval Reserve; Army Members six, to include three representatives of the Regular Army of which at least two should be serving officers, and three of the Territorial Army; Air Force Members four, to include three representatives of the Royal Air Force of which at least two should be serving officers, and one representing the Royal Auxiliary Air Force and Royal Air Force Volunteer Reserve."

Paragraph 2(*b*)—*delete* and *substitute:*—

" The *ex officio* Members in paragraph 1 shall include: Chief of the Defence Staff; First Sea Lord; Chief of the Imperial General Staff; Chief of the Air Staff; Director, Territorial Army, Cadets, and Home Guard; President of the Royal Naval College; Commandant of the Imperial Defence College; Commandant of the Joint Services Staff College; Director of the Royal Naval Staff College; Commandant of the Staff College, Camberley; Commandant of the Royal Air Force Staff College, Bracknell; A Permanent Secretary of a Service Ministry. The *ex officio* Members shall also include such other persons as the Council may from time to time appoint as Honorary Members."

Paragraph 4—for " one Air Force officer " *substitute* " two Air Force officers."

Paragraph 5—for " February " *read* " April."

Paragraph 10—*add:*—

" The Permanent Secretary of a Service Ministry, who is an *ex officio* Member, shall retire on vacating his appointment or at the third Annual General Meeting after his election, whichever is the earlier."

Paragraph 9—for " Anniversary " *read* " Annual General."

Paragraph 15—*delete* and *substitute:*—

" PROCEDURE

15. In all questions when the votes are equal, the Chairman presiding shall have a casting vote.

In all cases of difficulty or dispute on questions at the Council or Executive Committee the decision of the Chairman presiding shall be final.

The Council shall meet at least twice a year. Firstly, to approve the Annual Report and Accounts for the preceding year for presentation to the Annual General Meeting, and secondly, after the Annual General Meeting, to appoint the Executive Committee to whom the work of the Council shall be delegated as follows:—all matters which are the duty of the Council stand referred with full power to act except ' that no sale, mortgage, incumbrance or other disposition of any messuages, lands, tenements, or hereditaments belonging to the said body politic and corporate shall be made, except with the approbation and concurrence of a General Meeting.'

Four Members of the Executive Committee shall be a quorum on all occasions.

The Executive Committee should meet quarterly or as necessary and should in their turn set up the following Committees to carry out the work:—

Finance and General Purposes Committee to which all matters other than matters referred to the Journal and Library Committee stand referred with full power to act within the annual budget approved by the Council including the purchase and sale of securities and with power to affix the Seal to transfers of shares.

Journal and Library Committee to which the administration of the Journal and Library and the preparation of the Lecture Programme stand referred with full power to act financially within the budget as laid down by the Council.

The proceedings of the Council and all Committees shall be entered in a Minute Book.

At each meeting of the Council and Committee the Minutes of the last meeting shall first be read, and, when approved, signed by the Chairman."

Paragraph 16—before " Secretary " *insert* " Director ".

Paragraph 17—*delete* and *substitute:*—

" THE DIRECTOR

17. The Director is the Chief Executive Officer and Representative of the Council and, as such, is in charge of the staff and the current business of the Institution."

Paragraphs 18 and 19—For " Council " *substitute* " Executive Committee ".

CHAPTER IV

Paragraph 1—for " on the first Tuesday in March " *substitute* " early in May " and *delete* final sentence.

Paragraph 2—for " February " *substitute* " April ".

THE CHAIRMAN: The fourth Resolution deals with vacancies on the Council. The following Officers have been nominated:

Regular Army

General Sir Richard N. Gale, G.C.B., K.B.E., D.S.O., M.C.

Territorial Army

Brigadier J. A. Longmore, C.B., C.B.E., T.D., D.L.

Colonel J. A. T. Barstow, D.S.O., T.D.

Royal Air Force

Air Chief Marshal Sir Claude B. R. Pelly, G.B.E., K.C.B., M.C., A.D.C.

Regular Army

Lieut.-General Sir John D'A. Anderson, K.C.B., C.B.E., D.S.O., nominated for the vacancy caused by the retirement of General Sir George Erskine, G.C.B., K.B.E., D.S.O.

Lieut.-General Sir John G. Cowley, K.B.E., C.B., A.M., nominated for the vacancy caused by the retirement of General Sir Hugh C. Stockwell, G.C.B., K.B.E., D.S.O., A.D.C.

Royal Air Force

Air Marshal Sir Denis Barnett, K.B.E., C.B.E., D.F.C., nominated for the vacancy caused by the retirement of Air Chief Marshal Sir Norman Bottomley, K.C.B., C.I.E., D.S.O., A.F.C.

Air Vice-Marshal J. R. Gordon Finlayson, D.S.O., D.F.C., nominated for the vacancy caused by the retirement of Air Chief Marshal Sir Leslie Hollinghurst, G.B.E., K.C.B., D.F.C.

May I take it that you agree?

This was agreed.

THE CHAIRMAN: The next item is the result of the Trench Gascoigne Competition for 1960. I will ask the Secretary to report.

THE SECRETARY: For the 1960 Gold Medal and Trench Gascoigne Competition there were 19 entries. On the unanimous recommendation of the Referees, The Council have made the following awards:

The Trench Gascoigne First Prize of 30 guineas to Group Captain P. de L. Le Cheminant, D.F.C., R.A.F. He also won the Medal and First Prize in 1954 and again in 1958.

The Second Prize of 20 guineas is awarded to Captain D. L. Bailey of the Royal Marines.

The Third Prize is awarded to Major E. H. C. Davies, M.B.E., R.A.

The Chairman then presented the prizes.

GENERAL SIR RICHARD N. GALE, G.C.B., K.B.E., D.S.O., M.C.: I should like to propose "That the thanks of the Meeting be accorded to the retiring Chairman." Sir Leslie Hollinghurst deserves our thanks for the work he has done as Chairman of the Council. I can assure you from my own experience as a member of the Council that that post has invariably involved him in an enormous amount of difficult work. The whole question of the future of the Institution has been under discussion and that has required on the part of the Chairman a well-balanced judgment about what our line of country should be.

The negotiations to which he has referred and for which after all he was responsible and which he initiated have so far been most satisfactorily carried out. In the future the Institution will realize how much it owes to Sir Leslie for his judgment, his selfless devotion to the work of the Institution, and, speaking as a member of the Council, for the way in which he has conducted Council meetings. (*Applause.*)

ADMIRAL SIR HENRY MOORE, G.C.B., C.V.O., D.S.O., D.L.: It is with very great pleasure that I second the Resolution. As your Vice-Chairman for the last year, Mr. Chairman, I, perhaps more than anybody else on the Council, know how much work you have been doing for us and I now follow in your footsteps knowing that you have set me a very difficult task of maintaining the standard which you have set. I hope to be at any rate a little worthy of the jolly good example which you have set to all of us in the Royal United Service Institution. (*Applause.*)

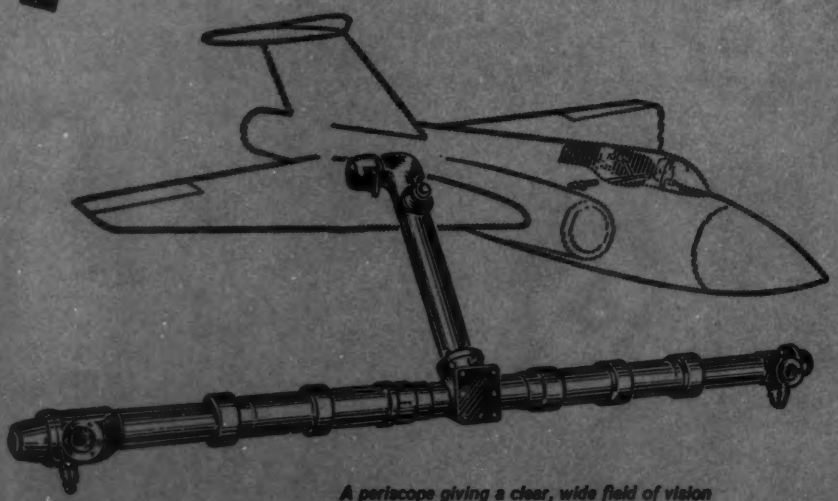
The Resolution was carried by acclamation.

THE CHAIRMAN: Thank you very much. That concludes the meeting.

PROFIT BY EXPERIENCE

For over 70 years we have specialised in the design and manufacture of scientific instruments for the most exacting uses—optical, mechanical, electrical and electronic.

Our vast experience and knowledge gained over these years is at your disposal. Can we help you in any way? Our design and research teams will be only too pleased to solve your problems, however technical or scientific.



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